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J. J. CASSIDY, M.D., EDITOR.

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VOL XXIV.

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NO. 1.

Original Contributions.

MEDICAL INSPECTION OF SCHOOL CHILDREN.*

BY W. F. CHAPMAN, B.A.,
Inspector of Public Schools, Toronto.

THIS is an age when more value is placed on the child than in any former age. Just as the twentieth century is to be Canada's century, working to her great development, so also is this century to be the child's century looking to the progress that will be made in giving every child the greatest opportunity for its best development. As the best physical conditions are necessary to the highest mental and spiritual development, everything that makes for the best bodily condition of the child enters into and forms an important part in a system of education that is intended to be a full and harmonious development of man's triple nature—the physical, the mental, and the spiritual. The last decade has seen considerable progress along the line of discovering the physical handicap from which many school children suffer, and of remedying in whole or in part this disability. Many children have been blamed in the past for stupidity and incorrigibility who of themselves were innocent of either, but were sufferers from some physical defect brought on by neglect or heredity. It is the object of this paper to summarize what has been, and is being, done, to note the good results, and to suggest further extension of the work.

The first country to have medical inspection of schools was France. It was established by law in Paris in 1843, but, like many other philanthropic movements, made little progress at first.

* A paper read before the Inspectors' Department of the Ontario Educational Association.

Some of the large cities of Germany and England have medical inspection of schools. It is, however, for the New World to take up the question, and, with that energy which marks New World enterprise, carry it to success.

Boston was the first city on this side of the Atlantic to adopt it, in 1894. Quickly the good work spread, until to-day many of the cities of the United States, and a few in Canada, have a more or less complete system.

New York has probably the most highly developed system in the world, with Philadelphia a close second. New York introduced the system in 1897, and has perfected it, so that since March, 1905, the system provides for a complete physical examination of every school child. New York has not only a large staff of physicians, with their districts and duties specifically assigned, but also a special corps of trained nurses, who, besides giving treatment for parasitic and contagious skin diseases, visit the homes to see that the doctor's orders are being followed, and to give instruction and practical assistance when necessary.

The following interesting and complete *résumé* of the system in Philadelphia is from a paper by Professor G. H. Heitmüller, A.B., M.D., published in *Washington Medical Annals*, March, 1907: "The System in Philadelphia is divided into:

"1. Sanitary inspection of buildings.

"2. Systematic examination of pupils.

"In sanitary inspection of buildings the following points are noted: (a) Overcrowding, the cubic capacity of each room, number of occupants. (b) Heating and ventilation: If steam or hot water, is there provision for ventilation by direct or indirect method? Give temperature of air in rooms at time of visit, also maximum and minimum temperature. (c) Illumination: Are rooms well lighted? If from above, behind, etc. Number of windows, size, relation to pupils and to floor space. (d) Are buildings ordinarily clean? Are there accumulations of sweepings on grounds, in cellars, etc.? Is ice and snow promptly removed? (e) Drinking water: If raw, filtered, or sterilized. What provision for drinking vessels? Note condition of all sinks, plumbing, etc. (f) Toilets: Note condition of water closets and urinals, especially with regard to cleanliness, odors, etc. Give number and location of closets and urinals and state if sufficient for pupils using same. (g) Coat rooms: Note facilities for storing, whether lockers, whether one or more coats, hats, etc., hang on single hook; also ventilation. (The cloak rooms in the vast majority of Washington schools have no lockers or special means of ventilation, and consequently the odor is often very offensive.) (h) Cellars: How lighted, ventilated? Are they clean, whitewashed, dry? (i) Playgrounds: Give size and condition, also condition of sand pile. Are they adapted

to needs of pupils? (j) Note character, quantity, and quality of cakes, candies, fruits, etc., sold about school to pupils.

“INSPECTION OF SCHOOL CHILDREN.

“Exclude every child suffering from (a) Acute disease, be it contagious or not. (b) Any form of disease that may be a menace to other children with whom it comes in contact. (c) Any disease of sufficient gravity to seriously impede work of the pupil at school. (d) Exclude every child who does not show evidence of successful vaccination.

“Systematic examination of all pupils for defects of vision: myopia, hyperopia, strabismus, and astigmatism.

“Defects of hearing: test with watch and rule, inspect auditory canal.

“Deformities: spinal curvature, flat foot, etc.

“Ophthalmic diseases: acute and epidemic conjunctivitis and trachoma.

“Throat and nose disease: mouth breathing, nasal discharge, adenoids, hypertrophied tonsils.

“Cutaneous diseases: impetigo, itch, etc.

“Chest diseases: phthisis, bronchitis, asthma.

“Parasitic diseases of scalp and elsewhere.

“A routine culture is made in all cases of sore throat.”

Besides Boston, New York, and Philadelphia, which have daily visits, many other cities have bi- and tri-weekly, or less frequent, according to conditions or the call of the principal.

Some cities have a system of eye examination by the teachers, sometimes under the direction of oculists.

Montreal has lately added the system of nurses after the Medical Inspector, Dr. Laberge, had made a personal investigation into the merits of the New York system. The Board of Education in Hamilton, in April, 1907, appointed Dr. James Roberts Medical Inspector of Schools.

In Toronto an experiment is being tried of having the teachers do the work under the guidance of Dr. Sheard, the Medical Health Officer of the city, but I know of no other city where the teachers are called upon to do the work. The teacher has not the technical knowledge required, and the teacher's duties are sufficiently arduous without this additional burden. While this system will result in some good results, especially along the line of aiding defective vision, to call it medical inspection is somewhat of a misnomer.

Having thus indicated what progress has been made in establishing the system, we may now consider the net value of the result. Among the many advantages that result from medical inspection of school children are the following:—

(a) The prevention of the spread of communicable diseases

by excluding from school those contagious cases that are in their incipency and have not been recognized by parents.

(b) The placing of every child in the most favorable condition for progress by remedying, wholly or partially, those defects which retard a normal physical and mental growth.

(c) The securing of greater protection of other children, and the giving of medical advice, especially as regards defective vision, defective hearing, and defective breathing.

Whenever a systematic test has been made of children in city schools a surprisingly large percentage are found to be suffering from defective vision, and a considerable number from defective hearing. Many statistics are at hand to verify this. The teachers in our schools have knowledge of many such cases without applying careful, rigid tests.

Many pupils who are restless, inattentive, and dull are suffering from some physical defect, or mal-nutrition, and these may by a little medical attention be transformed into bright and happy children, with a new life before them. There are also the mentally defective, who require special treatment and teaching.

Special classes for defective children were first established by Principal Haupt, with the concurrence of his School Board, in 1759, in Halle, in Prussian Saxony. It was quickly demonstrated that the isolation of these unfortunate children into small classes, taught by teachers of special qualifications, was a rational, just, and most humane treatment.

In the year 1899, the City School Superintendent of Mannheim, Dr. Sickinger, introduced a system of "instruction groups," having each an individual character. In addition to those classes for pupils capable of doing normal work, special classes known as "repeating" or "furthering" classes were formed for those who, from inadequate ability, could not be promoted, for if they were they would be "dregs" or "ballast" in the higher classes. For these a special goal is set, and they receive more individual attention, for the classes are smaller. If, however, it is found that a child is so meagerly endowed mentally that he is not being benefited in a "repeating" class, he is transferred with the aid of the school physician to an auxiliary school class. In the school year 1904-05 there were four of these classes in existence, with a total of 67 children. There would thus be a smaller percentage of pupils in the auxiliary classes in Mannheim than in Halle, owing to the sifting process through the "repeating" classes.

When a pupil is transferred to one of these special classes, called also "repeating," or "furthering" classes, he presents a transfer card conveying the following information, certified by his former teacher:

1.—PERSONAL HISTORY OF THE CHILD.

Name of child.

Date of birth.

Place of birth.

Religion.

Name of father or guardian.

Position of father or guardian.

Parents' residence.

2.—HOME CONDITIONS OF THE CHILD.

Are both parents still living?

Has it a stepfather, stepmother, only a father, only a mother?

Is it an orphan, and under some one's care?

Is its education and care neglected?

3.—PREVIOUS SCHOOL ATTENDANCE.

Has it attended only this school?

Did it come from some other place? (From what school, class, and in what school year was it?)

Was its attendance in any class irregular? (Why?)

4.—THE CHILD'S BACKWARDNESS.

In what classes did it remain more than one year? (State briefly in what subjects its work was unsatisfactory.)

5.—REASON FOR ITS BACKWARDNESS.

On account of lack of talent?

On account of lack of application?

Other causes (illness, transfer, home conditions)?

6.—FORMER DISEASES AND ACCIDENTS.

Fits? St. Vitus' Dance? Brain troubles? Head injuries?
Rickets? Dizziness? Diphtheria? Measles? Scarlet fever?
Whooping Cough? Etc.

7.—PHYSICAL ANOMALIES AND SIGNS OF DEGENERATION.

Signs of paralysis? Headache? Speech? Hearing? Eyesight? Organs of smell? Swelling of glands? Trembling and twitching of muscles? Curvature of the spine? Malformation of the limbs? Chronic diseases? Etc.

8.—PSYCHICAL PECULIARITIES.

Cleanly? Attentive? Good-willed? Sociable? Mendacious? Thievish? Dull? Excitable? Irritable? Sensitive?

Passionate? Whimsical? Bashful? Lazy? Imaginative?
 Forgetful? Superficial? Mean? Etc.

9.—SPECIAL INCLINATIONS AND ABILITIES.

Singing? Writing? Drawing? Arithmetic? Hand-work? Etc.

10.—GRADE OF SCHOOL-WORK REACHED.

It is very evident that this whole subject of special classes for defective children is fraught with difficulties and requires most careful and delicate handling. Parents naturally resent any suspicions regarding the mental disability of their children, and if these auxiliary schools are ever held up to scorn in any way, or are dubbed "mad schools" or "dunce schools," the whole system becomes unworkable.

The limits of this paper forbid a more extended reference to the work of these special classes, but enough has been given to show the close relationship existing between medical inspection of school children and the formation of these classes. For the facts regarding the schools of Halle and Mannheim, the writer is indebted to a late Bulletin from the Bureau of Education, Washington, entitled "The Auxiliary Schools of Germany," by Doctor Maennel, which gives a complete history of their growth and good work.

There has just been printed by order of the Legislative Assembly of Ontario, a most interesting and instructive report by Dr. Helen MacMurchy, of Toronto, on "The Care of the Feeble-Minded in Ontario." Dr. MacMurchy is an enthusiast in sociological work, and has spared neither time nor energy in collecting definite information on this important subject. I ask your indulgence while I read a short paragraph from her report:

"MENTALLY DEFECTIVE CHILDREN IN OUR SCHOOLS.

"The Department has communications from forty-five different people in the Province in reference to this branch of the enquiry. There can be no doubt that here is the place to concentrate our attention and energy. The problem must be studied in the school-room. Dr. Potts, one of the investigators specially appointed by the Royal Commission in Great Britain, examined 31,092 school children in the 'Pottery Towns' of England. He found 185 of the number mentally defective, or about .59 per cent. Dr. Francis Warner, in an examination of 100,000 children in London, showed that one per cent. were mentally defective, and other authorities have published statistics to show that about two per cent. of the elementary school children in certain large cities will never be able to manage their own lives successfully on account

of mental deficiency. This seems appalling, and perhaps the most important lesson we can learn from it is the necessity of our dealing with the question *now* while we have nothing like that number. If we let this time pass and defer and delay to face the question, the number will inevitably increase until we lose the present opportunity and come to feel, as they do in England, that the problem is so utterly overwhelming that it cannot be dealt with successfully. From the statistics now before me, I have reason to think that the number of mentally defective children of school age in Ontario is somewhere between three and five per thousand, that is, .3 to .5 per cent. of the total population under 14. But it is difficult to form a correct estimate at present. We need very much a better enforcement of our Truancy Laws. It seems to be generally agreed that there are many children of school age who are not in school, and, of course, one cannot wonder that the backward and mentally defective children, who feel they are not wanted there, and for whom nothing much is attempted to be done in our schools at present, are the first to stay away. It is very important to differentiate between a child who is only backward, and one who is mentally defective. 'A mentally defective child would be abnormal for any age, whereas a backward child is merely abnormal for its own age.' A child is often backward because he does not see well, or does not hear well, or does not breathe or develop well on account of adenoid growths almost closing the breathing passages and thus preventing the purifying of the blood. He may be backward because he works long hours out of school, or because he is not properly fed, or because he is not well. The School Doctor, when Medical Inspection of Schools, now permitted and advised in this Province, is carried out, will save and help many backward children and mentally defective children. But while skilled medical aid to sight or hearing or breathing may, and often does, change a backward child into a normal child, no skill, no knowledge, no training—nothing—will ever change a mentally defective child into a normal child. What can be done is to make the most of the powers and capacities the mentally defective child has—to train the bodily powers, the hand, the eye,—the power of working, and place the child who will always remain a child in mind, though not in body, in the society of its equals, in a sheltered corner of the world, that is, an Institution, where conditions are adapted to it. The life history of the mentally defective children in our Public Schools to-day may be written down in outline just as soon as their mental defect has been accurately recognized, or, to speak medically, diagnosed."

From what sources comes the demand for Medical Inspection?

1. Such work is a strong ally of Boards of Health. Unless

rigid and continuous preventive measures are taken, the school is a powerful agency for the spread of contagious diseases.

2. Teachers feel the need, and welcome the physician's aid.

3. Parents give no opposition when they understand the matter, and soon appreciate highly the object sought to be attained.

Naturally the need of Medical Inspection is greatest in the large cities, where the population is much congested. Urban schools, likewise, call more loudly for the system than do the rural, but there is a need, to a greater or less degree, everywhere, and the progressive colony of Tasmania has lately established the system of medical inspection in the rural schools.

Before concluding, I desire to read a few of the many testimonies of School Superintendents and Health Officers as to the value of Medical School Inspection where the system has had a fair trial. These reports came to me last May in response to a series of inquiries. They show the practical working of the system and its popular approval.

In reply to your enquiry of May 18th, I may say that we have had systematic medical inspection in the Public Schools of this city for the past eight years.

We have one medical inspector, who gives practically all his time to the work. This inspector is a regular physician of wide experience; he is likewise a member of the Board of Health. His work has been of very great service to the schools, so great, in fact, that we feel that we could scarcely do without it.

JAMES E. BRYAN, *Superintendent*.

Camden, N.J., May 23rd, 1907.

In reply to your recent letter concerning Medical Inspection in our Public Schools, I beg to say that our Board of Health appropriated \$10,000 at the beginning of the current year for this purpose. Twenty-one district physicians were named to inspect the schools. Pupils suspected of having contagious disease are sent to the office by the teachers and there examined privately by the district physician. The principal has power to exclude pupils on the order of the district physician.

F. D. DYER, *Superintendent*.

Cincinnati, May 25th, 1907.

Medical inspection is carried on in the schools of Hartford directly by the Board of Health, operating so far as exclusions from school are concerned in connection with the Board of School Visitors. It has been carried on for about eight years, and has been very successful in preventing the spread of contagious and infec-

tious diseases among school children, and, of course, throughout the city.

Three inspectors are employed, physicians of repute, who devote about two hours each day to the work, visiting the schools, all of them at least once a week. Children found to have suspicious throats, diphtheria bacilli, scarlet fever scale, measles in early stages, etc., are excluded; also children with parasitic diseases of the head, vermin, and recently those who are in a filthy condition, are also excluded. The Board of Health, through its inspectors, traces these children up until something is done in the way of cleaning up, getting rid of vermin, etc. Unless parents are observant of the recommendations of the Board of Health in this regard, they are taken before a magistrate and fined.

THOMAS S. WEAVER, *Superintendent*.

Hartford, May 20th, 1907.

The medical inspection of schools in the city of Indianapolis is in charge of the Department of Public Health and Charities. There are twenty-four physicians, who are assigned one or two schools, according to the size of the school. They are expected to make one inspection per week, and such other inspection as the principal may desire. We find that considerable assistance is given the Health Department in the early recognition of infectious and contagious diseases. The inspectors are not permitted to prescribe or suggest any line of treatment, but must refer the child to the family physician.

EUGENE BUEHLER, M.D., *Health Officer*.

Indianapolis, May 21st, 1907.

We have had a regular system of medical inspection in the Paterson schools for the past ten years. This work is done by six Paterson physicians. Each of these six physicians calls at four schools every day. The principals and teachers of the schools send to the waiting room all pupils that they think the physician should see. We have recently added to the force one inspector, who will give close attention to the eyes of the children. Inspectors receive \$250 a year.

JOHN R. WILSON, *Superintendent*.

Paterson, N.J., May 23rd, 1907.

In reply to your letter of the 18th instant, permit me to say that we have regular medical inspection of our Public School children in Philadelphia, and that it is in its third year of operation. The work is under the supervision of this bureau, and is done by a corps of fifty inspectors, all of whom are graduates of medicine. The advantages of the work are manifold: First, in detect-

ing children suffering from contagious diseases in their incipency, and their prompt exclusion from school; next, in detecting children that are suffering from any malady that impedes their progress, and who should be receiving medical care; and, third, in detecting children who, while physically or mentally defective, are not suffering from such ailments as would require their exclusion from school, but who should be under a doctor's care.

Since the organization of the work in Philadelphia it has grown in such favor that I do not believe the public would now consent to its abandonment.

A. C. ABBOTT, *Chief of Health Bureau.*

Philadelphia, May 24th, 1907.

Having established the need for such work and its practicability, it but remains to urge all school authorities to take steps to inaugurate the system, either directly by Boards of Education or through the local Boards of Health, or through conjoined action by the two Boards. The work can be extended as the necessities may require, and it is certain that satisfactory results will follow.

SPINAL ANALGESIA.*

BY DUNCAN ANDERSON, M.D., TORONTO.Anesthetist: The Toronto General Hospital.

HISTORY.

THE idea of medicating the spinal cord was first suggested by J. Leonard Corning, of New York, in 1885. At this time he thought the anesthetic was distributed by the small veins. He made the injection between the spinous processes of the lower dorsal vertebrae and obtained sufficient anesthesia to pass a sound and urethral electrode without pain. His paper on this procedure appeared in the *New York Medical Journal*, October 31, 1885, page 483. Later in 1894 he deliberately and intentionally penetrated the membranes in the second or third lumbar space, and deposited the solution on the *Cauda Equina*. An account of this undertaking is given in his book on *Pain*, under the caption, "The Irrigation of the *Cauda Equina* with Medicinal Fluids," page 247 et sequor. This was published by Lippincott in 1894, five years before the publication of Bier's first paper on Spinal Anaesthesia. Bier has certainly amplified the procedure, but as far as the principles are concerned he has discovered nothing. His use of Quincke's aspiration of the cerebro-spinal fluid as a means of determining when the needle has penetrated the membranes is a convenience. He produced anesthesia first in a patient in August, 1898, and subsequently experimented on himself and assistants. Cocaine was used. The immediate and after effects were so severe that it was soon practically abandoned until the discovery of stovaine about four years ago. Since then several drugs have been used with varying degrees of success, such as novocaine, tropacocaine, alypin, scopolamine, and morphine. In this paper I am dealing only with stovaine according to Barker's method and formulae.

The German and French investigators have used solutions of very different specific gravities. Chaput's, for example, has a specific gravity of 1.082, while Bier's solution has a specific gravity of 1.005. As the specific gravity of the cerebro-spinal fluid is 1.007 it will be noticed that Chaput's solution is much heavier while that of Bier is much lighter than the cerebro spinal fluid. They claim that the distribution of the analgesic fluid in the spinal sac takes place in one of two ways, or by a combination of both: (1) By diffusion; (2) by shifting the entire column of cerebro spinal fluid. As a rule they use a large syringe and

*Read before the Ontario Medical Association at Hamilton, May 28, 1908.

aspirate cerebro spinal fluid to mix with the solution, the whole being subsequently injected. Their results, however, have been wayward and uncertain; sometimes one part has become analgesic when they wished to operate upon another; in other cases the anaesthesia would extend well upwards, even over the head and neck, while in others the legs alone would be involved.

Professor Barker, of University College, London, after investigating the matter carefully, decided that gravity was the principle governing the distribution of the fluid. He accordingly had a solution made consisting of stovaine, 5 centigrammes; glucose, 5 centigrammes, and water to make 1 c.c. The specific gravity of this solution is 1.023. The glucose is added to render it more viscid, and hence hold the analgesic fluid together longer in the sac. In using this fluid he pays the strictest attention to the position in which the patient is placed.

TECHNIQUE.

1. Preparation of the Instruments.—This demands the utmost care. They should be washed thoroughly with castile soap and hot water, then in sterilized water, and finally with alcohol or ether. They are then sterilized with distilled water, or steam, in their own special sterilizer, such as this, which is kept for this purpose only. There is no danger of the syringe breaking if they be put on in cold water. They should be boiled for fifteen or twenty minutes. Any trace of an alkali in the needle or water will render the stovaine inert. After using they are again carefully washed and sterilized, and put away in this case, care being taken that no trace of water remains inside the needles or they will rust; dry heat will prevent this; the stylets are left out of the needles, and the piston out of the syringe to prevent jamming.

2. Preparation of the Patient.—The area over the lumbar region is shaved and washed thoroughly with green soap and hot water, and a disinfectant compress applied. Before the injection is made the back is washed carefully with hot sterile water to remove any traces of germicides which might otherwise be carried in on the point of the needle. I usually direct that the back be prepared as for operation, and do the washing with plain sterilized water when they come to the operating room.

3. Position.—A. Sitting. B. Lateral. The injection is most easily made in the sitting position with the back well rounded; I almost invariably use the lateral with the knees drawn well up toward the chin, the head well raised by pillows, and the pelvis raised about two inches. This produces a marked curve in the dorsal region which is of the utmost importance where high

anesthesia is required. If the uppermost knee be raised by an assistant and the uppermost shoulder pushed from him, a still higher area is reached. After the injection is made, the puncture is covered with collodion or adhesive plaster. The patient gently lies down or turns quietly over on his back with the head and pelvis still raised. The ears should be plugged with cotton wool, and a sheet suspended over his chest to prevent his seeing the operator's movements and the instruments.

OBJECT TO BE ATTAINED.

The object is to reach the sac covering the spinal cord and inject a definite quantity of analgesic solution into the cerebro spinal fluid below the termination of the cord. The syringe with carrier attached is filled from the ampoule by suction and laid aside in a warm place. The sac can be reached most conveniently through either the second or third lumbar space. The fourth lumbar spine is on a line with the top of the iliac crests. If the finger be placed on this spine the third space must necessarily be just above it. The needle, such as I have here, is jabbed sharply through the skin exactly in the middle line. As the pain of going through the skin sometimes causes the patient to bend his dorsal region forward I usually wait until they are quiet again, otherwise the spinous processes might catch the needle and thus bend or even break it. It is then pushed inward and a little upward for about one inch when it will be felt to puncture the ligaments and enter a space. The stylet is then withdrawn and the needle pushed gently further in when you may feel it puncture the sac, and a clear fluid will run out in fast or slow drops. If the point of the needle be felt to impinge on bone it may be withdrawn a little and the direction changed. If it is impossible to get through the third space the second one may be tried. The object in going through the median line is to avoid vessels and filaments of the cauda equina. When the fluid in the sac is found, from 5 to 10 c.c. is allowed to escape, and the injection is made by means of the carrier which protrudes a short distance beyond the point of the needle. This is important, as it is possible to puncture the sac with just the point of the needle, and when the analgesic fluid is injected it may escape outside the sac, which would be manifestly improbable with the carrier.

PHENOMENA.

Nervous or excitable patients make bad subjects. While we may eliminate to a certain extent, sound and sight we cannot prevent the phsyic effects produced by the length of time occupied in operating. Immediately after the injection is made the patient may complain of tingling in the feet, and of a numb feel-

ing coming on. In from three to fifteen minutes this numbness will extend up to a variable height, depending upon the degree of the dorsal curve. The pulse is stimulated, it becomes fuller and slower, followed sometimes by nausea and even actual vomiting. The latter are usually transitory and have not been present in any of my cases where less than 5 c.g. of stovaine was used; headache has not been present in any case. If the injection be made in the sitting position analgesia of the perineum alone results. If the patient be kept in the lateral, the underneath side and leg alone will be effected, and the anesthesia will extend higher up on the lower side. If they are turned over on their back immediately after the injection, both legs are equally involved, and the anesthesia will extend up to the chest equally, but favoring the side which was underneath during the injection. It passes off in a reverse manner. In the majority of cases the motor power is entirely lost. In three of our cases, however, the patients could move their toes and feet, but felt no pain in them when pricked with a pin, although they could feel the touch.

RESULTS.

I have used it in the following cases, twenty-five in all, with every satisfaction in twenty-four as far as the anesthesia was concerned, which has lasted from fifty minutes to two hours. In one case, the second, I failed to reach the sac, in a big muscular Assyrian. I believe now that this was due to lack of experience; no injection of course was made.

CASE 1.—Intestinal anastomosis in a moribund patient whom we thought was dead under ether on an open mask at a previous operation. Seven c.g. given in lateral position. In thirty seconds patient complained of tingling and numbness in the feet; inside of three minutes he was anesthetized up to the nipples. The operation lasted 57 minutes and the anesthesia about an hour longer. He was slightly nauseated but did not vomit. The pulse improved and the patient slept peacefully that evening. Operation being at four in the afternoon. He had had several general anesthetics previously, and asked me to use this one again should he require another. Unfortunately other fistule formed and he died six weeks later.

CASE 3.—Appendicectomy in a young man of 24 with a very bad heart. Six c.g. of stovaine was injected in the left lateral position; in four minutes anesthesia was complete up to the ribs; no pain felt. The operation lasted thirty-nine minutes. Slight nausea when the intestines were handled but no vomiting. The patient was perfectly comfortable after the wound was closed, and slept well that night.

CASE 5.—Ventral suspension in a nervous Irish woman, age

57. Six c.g. used, anesthesia complete in five minutes to the nipples; complained of the hard pillow under her head, and of the hard table, but did not know until two hours afterwards that she had been operated upon.

CASE 6.—Operation for hemorrhoids in a man, age 57. Five c.g. used in sitting position, anesthesia of the perineum alone; sphincter relaxed of its own accord. Felt no pain but a little discomfort.

CASE 7.—Prostatectomy in an old man, age 77; had been bed-ridden for four months. Perineal route. Five c.g. of stovaine used in lateral position; in seven minutes anesthesia was complete to the umbilicus. Pulse improved by the injection; no pain or untoward symptom; operation finished in twenty minutes. Saw him an hour later in his ward when he said he was feeling quite comfortable. The anesthesia was then down to pubic region; pulse was full and regular. When the anesthetic effect had passed off the pulse became fast and weak, and complained of pain in the wound. He died at six o'clock, about six hours after the completion of the operation. I think death was due to shock, the symptoms of which manifested themselves as soon as the anesthesia had passed off.

CASE 8.—Radical cure in a very nervous German Jew, age 24. Seven c.g. used in lateral position. Anesthesia in three minutes to the ribs. This patient was nauseated and vomited; pulse became very slow and weak. He became pale and complained of feeling very sick. This passed off after awhile, and he has got on splendidly without any untoward symptoms. I have questioned him repeatedly to find out if the nausea were produced by fear, and I believe it was.

CASE 10.—Was the first patient upon whom we gave the clinic at the Toronto General Hospital, March 28th, the double inguinal hernia patient, age 57, previously alcoholic. Had a stroke four years ago. Four c.g. of stovaine injected; after fifteen minutes there was numbness, but no anesthesia. Three c.g. more were injected when we got complete anesthesia up to the nipples, which lasted long enough to allow the sides to be done in succession. Anesthesia appears to be longer in coming in old people with rigid spinal columns.

CASE 11.—In this four c.g. of stovaine was used; the patient, young woman, age 26; remained in lateral position throughout. Her left leg and side alone were anesthetized. The operation was for the removal of the head of the metatarsal bone of the left foot. She could move her right leg at the end of the operation and sensation was intact in it. When she was turned over on her back to be taken to the ward the anesthesia extended to the right leg. She complained of headache afterward, but upon investiga-

tion I was satisfied it was due to the sand-bags, as she was in the habit of sleeping without pillows. There was no sign of rigidity of the neck muscles.

CASE 18.—An old man of 77. Gangrene of the left foot. had a stroke five years ago. In a miserable condition generally. Arteries relatively soft. Four c.g. of stovaine used. The anesthesia lasted one and a quarter hours. Leg amputated at the knee joint. Pulse improved, and he was quite comfortable throughout the operation, which he did not know was being performed. When the dressings were on we asked him if he would not decide to have the leg off, and he replied that while he had enjoyed our kindness in examining him so carefully he was afraid that it would cause too much pain. His temperature was normal afterward, and he is making a good recovery.

In conclusion, I may say that I have given details only of those cases which illustrate the salient points of the method. I have given the facts as I have been able to observe them without any feeling in the matter. The one point that strikes me most in contrasting this method with general anesthesia is the absolute prevention of any degree of shock while the operation is in progress, and while the anesthesia lasts. These cases, with the exception of one or two, were those in which for one reason or another, I did not care to use a general anesthetic, and in fact in which I believe a general anesthetic would have proved fatal.

During the last few weeks I have examined these patients repeatedly, have read over their charts and questioned the nurses and house surgeons, and so far have been unable to detect any dangerous symptoms due to the anesthetic. In the nervous Jew, case 8, there was a rise of temperature to 100 F. for two days after the operation, and a temporary trace of albumin; no casts were found.

In the nervous Irish woman, No. 5, in whom the ventral suspension was done a trace of albumin appeared temporarily. I do not know whether these traces of albumin were due to the anesthetic or not; I merely report them for what they may be worth. Case 15, a man, age 64, uses tobacco and liquor freely. Was one of the cases in which motor power remained. I had previously had trouble in giving him a general anesthetic. Four c.g. of stovaine used. Perfect anesthesia for forty-seven minutes. Three days after the operation he complained of his left foot dragging. I could find no sign of paralysis; but in walking it certainly hit the floor more forcibly than the right. It disappeared in a few days, and he is back at work again. In this connection it is interesting to know that paralysis of the sixth nerve occurred in a patient in Dr. Chambers' service at the Toronto

General Hospital from whom some cerebro spinal fluid had been aspirated; nothing had been injected.

At present I think this method of anesthesia should only be used in selected cases, and by those who are willing to exercise every care in its evolution. The possibilities of disaster are unquestionably great. Nevertheless, in careful hands I believe it will prove a valuable assistant to surgical procedures.

DISCUSSION.

Dr. Bingham, Toronto.—Was not an anesthetist and did not propose to become one. He had not used this method himself but had operated upon several patients to whom it had been administered by Dr. Anderson. The anesthesia produced was perfectly satisfactory in every way. No particular pain was caused by the introduction of the needle and the difficulty of finding the sac lessened with experience. He believed that, in selected cases, there was no question about the value of the method.

Dr. W. F. Langrill, Hamilton.—During the past two years twenty cases of spinal anesthesia at Hamilton City Hospital, Tropacocaine and stovaine, both used. No bad results with either, and in every case anesthesia required obtained. Method was used for most part on very old men to whom it was not safe to give a general anesthetic.

Dr. Marlowe.—I have seen spinal analgesia administered a number of times, but have not used it, being satisfied to wait for the light of further experience to be gained by those already making use of it. In sixteen cases in which spinal analgesia was used, or attempted, in Dr. Bruce's service, three were unsuccessful. In one he could not get the needle into the spinal canal. In another there was so much hemorrhage on making the puncture that the injection was not made. In the other sufficient anesthesia was not induced, necessitating general anesthesia and occasioning a waste of time of over half an hour. Disadvantages: 1. Sometimes difficulty of entering canal. 2. Possibility of hemorrhage. 3. Uncertainty and sometimes loss of valuable time. 4. Possible psychical shock in addition to ordinary traumatic shock which may be delayed. 5. Undesirable after results, as prolonged headache, possible neuritis or even late paraplegia. Contraindications to general anesthetics are lessened with experience of anesthetists, and these anesthetics are for the most part taken as they are given.

Dr. McLean, Guelph.—Had witnessed several of the cases operated on at the Toronto General Hospital, had failed to observe the "terror" on patients as described by Dr. Perfect, or the agony of puncture or "waiting for anesthesia." He reported having employed this method of anesthesia in a young woman

suffering from an acute attack of appendicitis, in whose case general anesthesia was contraindicated. In this case some difficulty was experienced in reaching the canal, but when reached the anesthesia was complete to costal margins within three minutes. There was momentary nausea which did not recur. The muscular relaxation was absolute. The operation was completed within twenty minutes. There was no headache nor other untoward symptom, and the recovery was rapid and uneventful. He considered that in suitable cases the Barker Stovaine method will offer marvelous help to surgery.

In the closing discussion Dr. Anderson stated that he was endorsing Professor Barker's method and formulae only, and in every case where the injection was made a satisfactory anesthesia resulted. Dr. Perfect's unfortunate experience certainly did not occur in his cases. He had given many anesthetics and in at least twelve of these Spinals he would have been afraid to attempt a general. In a recent letter Professor Barker states that his last one hundred cases have all been successful. Paralysis might develop. Bier and his assistants were injected with cocaine ten years ago and they are well to-day. Corning has never known of paralysis to occur. Chaput has noticed a temporary paralysis in some cases which he thinks was due to suggestion. They all got well. Headache may occur but is relieved by withdrawal of cerebro-spinal fluid, by caffeine or interstitial salines. He wished to thank Drs. Bingham and Primrose for the most of these cases.

PRESIDENT'S ADDRESS, ONTARIO MEDICAL ASSOCIATION.

BY INGERSOLL OLMSTED, M.D., HAMILTON.

Gentlemen.—Permit me first to thank you for placing me in the honorable position of President of the Ontario Medical Association. In electing a member of the profession of this city to fill this most important office, I feel that you wished to do honor to Hamilton and to the profession here, rather than to the individual. On two previous occasions Hamilton has been honored by the election of one of its citizens to the Presidency of this Association. In 1883 the late Dr. J. D. Macdonald was chosen, and again in 1888 the late Dr. J. W. Rosebrugh received the honor. The first and only meeting of this Association in this city was held in the old City Hall on James Street North, where the present City Hall stands, in the year 1884, just twenty-four years ago.

After an absence of twenty-four years, it is my pleasant duty to extend to you a hearty welcome. We feel that the prodigal has returned, and an intellectual feast has been prepared for you. We trust that the reception given you this year will induce you to return to us in the near future.

Hamilton has well deserved the name of the Ambitious City. It may not be generally known, but nevertheless a fact, that this was the first city in America where anti-septic surgery was practised. Dr. A. E. Malloch, a Canadian, who is with us this afternoon, was a house surgeon of Lord Lister. He returned to Canada and introduced Listerism in Hamilton in 1868.

In his early operations the spray was used, but realizing that it was unnecessary, he abandoned its use years before it was discarded in England. The results he obtained, and the work he did were as fine as anything I have ever seen.

Also this is the first city in the province where compulsory notification of tuberculous patients to the Medical Health Officer was established. It was owing to the energies of Dr. W. F. Langrill, the present Medical Superintendent of the City Hospital, that this important by-law was passed in 1902. At that time Dr. Langrill was the Medical Health Officer, and he was ably supported by the Hon. Lieut.-Col. John S. Hendrie, who was Mayor of the city.

There have been many improvements in this city during the past twenty-four years. Whereas formerly there was only one hospital, with accommodation for 100 patients, we now have two

first-class hospitals, the city, with 250 beds, and St. Joseph's with 50 beds. Both of these institutions are splendidly equipped with modern appliances, and over 3,000 patients are treated annually in the wards, and about the same number are treated as out-patients. The surgical work has increased by leaps and bounds, and the results have been excellent.

Two years ago a Sanatorium was established on the mountain, for the treatment of incipient cases of tuberculosis. It has accommodation for 35 patients. The results obtained there have been very encouraging.

Another very important institution is being erected, thanks to the generosity of one of our citizens, Mr. William Southam, namely, a hospital for advanced cases of tuberculosis. We will henceforth be in a position, we hope, to successfully cope with the ravages of this terrible disease. It is thus a great pleasure for us all to have the members of the Association meet here.

Now, in regard to the Association itself. We felt that owing to the tendency of its members to devote themselves to special branches, new sections should be formed. The various subjects could not be fully discussed in the two sections, Medical and Surgical, consequently three additional sections have been formed, namely, Preventive Medicine, Eye, Ear, Nose and Throat; Obstetrics and Diseases of Children. Two additional sections could easily be added, namely, Mental Diseases and Diseases of the Nervous System and Pathology. I firmly believe that if this plan were followed, and the different sections were placed in the hands of enthusiastic men, our annual meetings would be very much better attended.

With 2,500 practitioners in this province, we should have more than 10 per cent. of them at our meetings. Some parts of our Ontario are seldom represented on our programmes. This should not be allowed. During the year hundreds of interesting cases are seen by the different physicians, which are never published. The rule to take careful notes of cases should be more generally adopted. It would then be a very easy matter to get up a short paper which would lead to good discussion with marked benefit to all present.

During the past two years several county medical societies have been formed, and if the officers of these societies were to interest themselves in getting their members to write papers and present them to the Ontario Medical Association, the duties of the officers of this society would be lightened very much.

We want every physician, whether practising in village, town or city, to come to our meetings, and give us the benefit of his experience.

Many of the papers on the programme this year are by Canadians practising in different parts of the United States. Thus, there are two from New York, two from Johns-Hopkins Hospital, Baltimore, and two from Detroit. Montreal has sent some of her best physicians and surgeons to assist us at this meeting, and last, but not least, our brethren across the line, who unfortunately are not Canadians, have graciously laid aside their work and come to us with the best fruits of their labors.

For the preparation of this programme, gentlemen, we are chiefly indebted to the untiring energy and faithful work of the chairman of the Committee on Papers, my friend, Dr. Wallace.

As there are a large number of excellent papers to be read this afternoon I shall not take up any more of your time, but will proceed with the programme.

AN IMPROVED STOMACH TUBE.

BY RICHARD F. CHASE, M.D., BOSTON, MASS.

Instructor in Clinical Medicine, and Lecturer on Gastro-intestinal Diseases, Tufts College Medical School; Physician to the Boston Dispensary, Member of the American Medical Association.

THE degree of favor which this tube has met in the United States during the past two years suggests that it might be favorably received by physicians of other countries, if it were known to them. The tube consists of (1) an Ewald stomach tube, to which is attached (2) a saliva shield, (3) a glass connector, (4) a 30-inch plain tube, on one end of which is connected (5) a *valveless* rubber bulb.

The Ewald stomach tube is 30 inches long, marked at 23 inches with a white band to show the average distance of introduction in normal cases. It has an end and extra large side eye, opposite which are five small eyelets. The sharp edges of eyes (common to most tubes) are avoided, each tube, in this respect, being finished by hand. Fleiner's criticism of English tubes is equally applicable to those of American make:

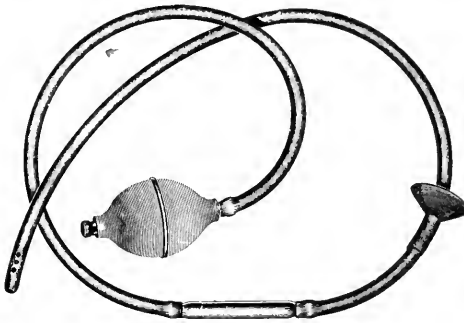
Fleiner (in *Diseases of the Digestive System, of Modern Clinical Medicine*, 1906, pages 49 and 50) says: . . . "these English tubes have glaring defects which for some unaccountable reason the manufacturers do not remedy. Their openings are frequently not large enough, and the margins of the openings, without exception, are so sharp that they readily injure the mucous membrane, particularly the mucous membrane of the stomach. It is to be hoped that the manufacturers will speedily place on the market more serviceable tubes, with rounded polished edges, that will meet practical requirements."

The saliva shield is adjustable and detachable; it directs the flow of saliva from the patient's mouth into a basin held by patient, thereby preventing it from mixing with the gastric contents or flowing on to office floor. The valveless bulb on *end* of tube is the chief feature of the apparatus. It is strong enough; it fits the average hand; its capacity is 3 ounces or 90 cc, so that the amount of fluid used is readily determined.

With this tube (a) aspiration or "expression" of stomach contents, (b) inflation of the stomach, and (c) lavage or douching of the stomach may be done without disconnecting any of its parts and without the aid of a stop-cock or shut-off. So much can hardly be said of any other apparatus, because, like the Boas Aspirator, the Leube Lavage Apparatus, etc., they are intended for one purpose only.

The tube is used much as a bulb syringe, except that suction or injection may be induced at the will of the operator *without* reversing the bulb. The thumb of right hand most conveniently supplies the place of an otherwise necessary valve. To wash out or douche the stomach, water is injected with the bulb (3 ounces at a time) with the amount of force desired, then allowed to siphon out in the usual way. If the return flow is delayed, it may be hastened by inducing suction with the bulb. If the eyes of tube become plugged with food particles, the injection of one bulb of air or fluid clears the eyes.

To distend stomach, air is injected in the same manner as water, the tube is simply pinched to retain it. By allowing patient to pinch the tube, the operator's hands are free to percuss or palpate stomach. The air may be allowed to escape at any moment, simply by releasing tube.



To obtain the stomach contents, siphonage is started by applying suction with the bulb.

After a test meal, or in poison cases, the contents may be more thoroughly and more expeditiously removed than with various other devices.

By substituting a Rosenheim tube for the Ewald tube, one has an ideal douching apparatus. By this means, 33 small forceful streams are thrown upon the walls of the stomach.

By substituting a colon tube for the Ewald tube, one has an apparatus for inflating the colon and administering rectal injections and high enemata.

Riegel (in his *Diseases of the Stomach*, 1903, page 260), says: "Mild and slight degrees of motor insufficiency are particularly amenable to treatment by douching. According to Rosenheim the procedure can also be employed with advantage in mild degrees of Chronic Catarrh of the Stomach with or without reduction in the motor powers, and, finally, in severe states of irritation affecting the sensory and secretory apparatus."

In self lavage, the patient sitting, holds tube at mouth with left hand, while, with the right hand, he injects the fluid into stomach from a basin, placed upon a chair or table. The fluid is allowed to siphon out in the usual way.

The tube or apparatus meets every requirement of the specialist. It is simple in construction, more easy to operate, and far more efficient than the tube with bulb in the middle, so much used by the general physician in the United States.

One who is familiar with the technic of lavage, inflation, etc., requires no directions for the use of this tube, but they are given inside of box cover containing tube for those who need them.

The tube is carried in stock by all of the larger dealers in surgical instruments in the United States, and would probably be procured by any local Canadian dealers on request.

Medicine.

IN CHARGE OF
J. J. CASSIDY, M.D., W. J. WILSON, M.D.,
AND J. H. ELLIOTT, M.D.

MILK AND INFANT FEEDING.

THE Hygienic Laboratory of the Public Health and Marine Hospital Service of the United States have issued a bulletin (No. 41), of 750 pages, on "Milk and its Relation to the Public Health." This must be considered the most authoritative work to-day on the conveyance of disease through milk, on the chemistry and bacteriology of milk and ice cream, their contaminations, the question of sanitary inspection and pasteurization, while the subject of infant feeding presents much which does not appear in our text-books. The various and often complicated methods of modifying cow's milk for infant feeding have meant so much in time and trouble that we read with much relief the statement, "Undiluted cow's milk can be given from the beginning of the first month on, provided its content of fat does not exceed 3 to 3.5 per cent., nor the daily quantity greater than 150 c.c. per kilogram of body weight." Maternal nursing is fully considered, but the article on artificial feeding is most interesting, leading up gradually to the above statement. The great objection to cow's milk has been the belief that the proteids are very difficult of digestion, and to overcome this supposed difficulty, the various modifications have been suggested, the addition of alkalies and diluents, split-proteids, and other methods to lessen the percentage of proteids. The work of Henbner, Keller and Czerny, which has been confirmed, shows that cow's milk proteid is almost as easily digestible *per se* by infants as are the proteids of woman's milk. On the other hand, these workers have shown that the element in cow's milk which causes digestive disturbance is the fat and not the proteid, for they state that the apparent curds found in the stools following gastro-intestinal disturbances in bottle-fed infants, and which have been taken for curds without further investigation, are for the most part saponified fat, neutral fat, and fatty acids, interspersed in severe cases with clumps of bacteria.

If infants are fed on fat free milk, although the milk be undiluted and containing 3.50 per cent. of bovine proteid (woman's, 1.50), no trace of casein appears microscopically in the stools. It has been found that an energy quotient of 70 is the minimum on which a child of less than one year of age could maintain its weight, while a quotient of 100 calories per kilo of body weight

marks the upper limit which can only be temporarily surpassed without inducing disastrous nutritive and gastro-intestinal disturbances. One gram of fat produces 9.3 calories, and one gram of proteid and one gram of carbohydrate have each a caloric value of 4.1. Thus it is impossible by inadvertence with carbohydrate or proteid alone to get an energy quotient of a dangerous height without producing a food which either, from its state of concentration, or by reason of its bulk, would be manifestly impossible to feed to any infant. On the other hand, slight increases of 1 or 2 per cent. in the fat content of a food containing normally 3.00 to 4.00 per cent. may have the effect of raising its caloric value to a dangerous extent.

An excess of fatty food is not absorbed but remains in the intestine and is there saponified. In this way an excessive abstraction of the alkaline bases of the body takes place, causing nutritional disturbances. It would seem that a milk which contains 4 per cent. butter fat were too rich and that a fat content of 3 to 3.5 per cent. would be better for infant feeding. Dairymen tell us that calves do best on this. Rich milk, i.e., rich in fat, for with increase of fat there is no corresponding increase in salts present, is a result of careful breeding and not a condition original to the milk of the cow.

A second effect of excessive fat lies in its behavior, that, when casein is curdled in the stomach by rennet, a large per cent. of the butter fat present is carried down with the casein. This action of fat in making curds large and indigestible by reason of their excessive fat content, has long been known to dairymen, as they are well aware of the fact that Jersey cows often can not nurse their calves by reason of the excessive richness of their milk. In the case of the human infant, if the milk be too rich it is vomited. If is just rich enough to produce a curd with a fat content larger than it should have, peristalsis is checked and the stomach discharges its contents slowly to permit the gastric juices to act. The next meal finds the stomach with a residue from the one previous, this vicious cycle keeping up, fermentative changes take place, with resultant troubles.

There is a full consideration of the percentage system of feeding and a discussion of some well known tables, but this system is found to be based upon conclusions that are incomplete. The whole question of artificial feeding of infants may be reduced from a condition of extreme complexity to a relatively simple and scientific basis.

To settle any doubt as to the digestibility of whole cow's milk in the stomach of infants, reference is made to the observations of a number of continental clinicians, who have fed infants from the earliest days of life on whole cow's milk, in proportion to their needs, without observing anything but the happiest results.

In feeding cow's milk undiluted, our practice must be controlled by this circumstance; abroad, owing to different methods of feeding and different grades of cattle, milk containing over 3.75 per cent. of butter fat is rarely found, and the average is probably not over 3 to 3.50 per cent. in most cases. Here, a milk is poor in butter fat which does not average 4 per cent., while selected milk and certified grades are often nearer 4.50 or 4.75 per cent.

Consequently, though undiluted cow's milk may be used satisfactorily in France and Germany, it cannot be advised in this country unless its fat content is known to be below 3.50 per cent. This condition can be secured either by using milk from Holstein cattle, which is normally no richer than this, or by removing appropriate amounts of top milk from bottled milk after the cream has risen and thoroughly mixing the remainder.

GENERAL DIRECTIONS FOR THE ARTIFICIAL FEEDING OF INFANTS.

For children one month old or over.—First, weigh the child; allow a daily quantity of cow's milk of one-seventh body weight for infants up to three months of age, one-eighth the body weight from 3 to 6 months, and after that from one-ninth to one-tenth.

Quality of milk to be used.—Use nothing but clean, fresh bottled milk, "certified," if possible, or from a high-grade dairy, making sure that fat content is not over 3.50 per cent. If it is greater than this it must be reduced by dipping the cream from top of bottle as per this table.

Table showing quantities of top milk that must be removed from top of quart bottles of milk in order to reduce the percentage of fat to 3.50 per cent:

Original percentage of fat in the milk.	Quantity of cream to be removed from top of quart after cream has risen, to reduce fat to 3.50 per. cent.
4.00	30 cc = 1 ounce
4.50	60 cc = 2 ounces
5.00	80 cc = 2 $\frac{2}{3}$ ounces

Mix the milk thoroughly by pouring into another vessel and measure out the amount of the daily supply requisite, as indicated by the age and weight of the child; *e.g.*, for child one month old, weight, 9 lbs., 1-7 body weight=19 oz., daily quantity of milk=19 ounces. Divide the quantity so obtained equally into nursing bottles, corresponding in number to the number of daily feedings. Sterilization of all milk is advocated for infants under three months, after that pasteurization until the eighth or ninth month, when raw milk may be used, provided weather be cool and milk reliable.

There have been two objections to the use of sterilized milk. First, on account of supposedly greater difficulty in digestion, and

second, because of danger of producing infantile scurvy. Careful investigations of the digestive absorption of the constituents of heated milk have shown evidence of a considerably greater degree of completeness in such absorption than is the case in unheated milk. And, too, the French clinicians bring forth almost conclusive evidence of the superiority of both sterilized and pasteurized milk over raw cow's milk in this respect.

The second objection, that of causing infantile scurvy, appears to reside in qualities inherent in the milk used, and is not attributable to the sterilization. This scurvy also occurs in breast-fed infants. Should a prophylactic be desired, all danger may be averted by the administration two to three times a day of one-half to one ounce of orange juice one hour before feeding.

For infants under one month of age.—In the early period of lactation woman's milk shows more proteid and less sugar and fat than at subsequent times. We can, therefore, more easily imitate the provisions of nature by feeding skimmed milk to infants during the first month of life. Walls has found that sterilized undiluted skimmed milk is entirely digestible even by premature infants. Skimmed milk is obtained either as centrifugally skimmed milk from the dairy, or by siphoning off the under half of a quart bottle whose cream has risen. After the end of the first week, one-third whole milk and two-thirds skimmed milk can be given; after the end of the second, one-half whole milk and one-half skimmed milk; at end of the third week, three-quarters whole milk and one-quarter skimmed milk, passing to whole milk at end of fourth.

Feeding of older infants.—The seventh month marks the time when it is desirable to supplement exclusive milk feeding by some other food. This should take the form of some cereal broth, such as oatmeal jelly, barley water, or dextrinized gruel, and should be added to the milk in proportion of one-third broth to two-thirds milk.

While, as a rule, it may be postulated that no infant is born with a digestion congenitally weak, still, as the result of inadequate feeding, either maternal or artificial, we do encounter infants whose digestive processes are a law unto themselves. Such cases must be attacked along individual lines. Fat-free buttermilk, or equal parts of buttermilk and malted cereal broths, are in many instances digestible with apparent satisfaction by such infants. Skimmed milk, closely resembling buttermilk in composition, is also recommended. When tolerance for cows milk in this form is established, it must be supplanted by a gradual return to whole cow's milk, as both buttermilk and skimmed milk are too poor in nutritive elements to furnish the basis for any long-continued scheme of artificial feeding.

Atrophic infants, of course, require a greater energy quotient

than the normal child of the same weight. In such cases the food given may be increased above the normal, both in quantity and caloric value, taking care that in providing such excess the digestion be not embarrassed.

It is important in artificial feeding to remember that cow's milk, when compared with human milk, is essentially an alien food, its fats and proteids are different in composition from those of human milk, and must of necessity be regarded as substances foreign to the human infantile digestive tract. As a consequence, greater energy is required for its digestion and assimilation, hence we should spare the infant metabolism any further strain which might be due to the conversion of a milk impaired by fermentative changes due to its improper preparation and preservation as a food.

While we can never hope to vie with maternal nursing, a careful study and application of the principles expounded in this bulletin should go far toward eliminating the excessive complexity and uncertainty which have hitherto characterized the whole subject of infant feeding and, in the main, be productive of better results than we can obtain by other methods.

ACCIDENTS IN THORACENTESIS.

DR. W. F. HAMILTON, in the *Montreal Medical Journal*, November 1907, relates four cases of accidents in thoracentesis.

In the first, after the withdrawal of fifty ounces of fluid, cyanosis and troublesome cough set in, with expectoration of albuminous fluid. Under stimulation he recovered.

In the other three, exploratory puncture was made for diagnosis, serous or purulent effusion being suspected. In one pneumothorax developed from puncture of lung. Good recovery. In another exploratory puncture was made in eighth interspace in the posterior axillary line. Alarming dyspnea and collapse followed, with spitting of blood, face ashen, involuntary urine and feces, pulse 147 and weak. The right lung, hitherto clear, filled with moist rales. Using stimulants (heat, brandy, etc.), patient recovered, and right lung cleared in four hours. In the last, puncture was made in anterior axillary line, between fourth and fifth ribs, the needle pointing upwards. On withdrawal, the head was drawn back, and all the body became rigid, splenius of bladder relaxed, face cyanosed, skin elsewhere mottled, pulse absent, respiration suspended. Artificial respiration was adopted and strychnia given; rigidity persisted twenty minutes, when some clonic spasms appeared, skin gradually became dusky and pallid; consciousness returned in one hour. There was some vomiting later.

In about twelve hours a series of convulsive seizures set in, and recurred for four hours at frequent intervals. Total blindness was present. Gradual recovery ensued.

This paper is a valuable contribution to the literature on Thoracentesis.

J. H. E.

PURULENT PLEURISIES IN CHILDREN.

IN *La Clinique*, December 27, 1907, E. Lesne deals with this subject. Purulent pleurisies are four or five times more frequent in the child than in the adult, more frequent in early than late childhood, and are almost the only pleurisies seen in the new-born. Many are not diagnosed, being recognized only at autopsy. This frequency is explained by the fact that infants have more often a pneumococcus than a tuberculous infection.

About 65 per cent. of empyemata are due to pneumococcus, and are secondary to pneumonia or broncho-pneumonia. The streptococcus follows next, though in the new-born its percentage is greater than the pneumococcus. Other varieties of empyemata are exceptional in the infant, those due to the tubercle bacillus, putrid pleurisies due to anaerobes, secondary to pulmonary gangrene, those from colon bacillus, staphylococcus, etc.

The pneumococcus pleurisies have a variable *onset*. At times they appear in a child whose pneumonia or broncho-pneumonia does not clear up, and temperature does not fall; these are called para-pneumonic. Again, and more often, eight or ten days after a pneumonia or broncho-pneumonia the child presents, more or less rapidly, emaciation and febrile symptoms—meta-pneumonic. Or, the pulmonary condition may pass unrecognized and the purulent pleurisy seem primary.

The general signs attract attention—a very irregular temperature at times, a true hectic, again almost no fever, often abundant sweats, almost always a pale, ashy facies with emaciation, the fingers frequently hippocratic, and one is not disinclined to consider the condition tuberculous.

The physical signs do not always allow one to make a diagnosis, and they vary according to whether the pleurisy is in the general pleural cavity or encysted between the pulmonary lobes themselves or between lung and diaphragm.

The *course* is variable; after a time difficult to determine, but always long (one to three months on an average), it may terminate in several ways. Sometimes cure follows by resorption. An interlobar pleurisy may rupture into the air passages. This occurs toward the third or fourth week, and revealing a condition

not recognized. A return to health may then ensue, or cachexia followed by death. During its course there may be localized visceral or articular pneumococcic infections. Exceptionally and never in the interlobar forms, there may be an empyema necessitatis, which an early diagnosis will allow us to avoid. Other terminations are rare.

The *streptococcus pleurisy*s are the most common in the first year and are secondary then to puerperal infection, or to streptococcus broncho-pneumonia; rarely also appearing in the course of or during convalescence from scarlet fever. At times their onset is insidious, again severe with chills and fever. They are rarely interlobular. The general condition of the patient is more altered than in a pneumococcus infection, the face more earthy, the typhoid aspect more marked, the type of fever showing more marked fluctuations. Its course is acute or sub-acute, and death most often occurs with septicemic phenomena, or with hectic; cavitation and empyema necessitatis do not occur.

Purulent pleurisy due to tubercle bacillus are very rare and present nothing special in the infant. Their onset is insidious, symptoms not severe and no high fever. There is usually a large effusion, recurring rapidly after respiration, and may end, if untreated, in empyema necessitatis or pyopneumothorax. Death occurs through hectic or general tuberculosis.

Diagnosis should be made as far as possible by the clinical picture and physical signs. Where these fail two useful procedures may be utilized: 1. Radioscopy and radiography. 2. Exploratory puncture. The latter when positive leaves no doubt, but if negative does not allow one to eliminate purulent pleurisy. One may pass by the wall of an encysted pleurisy, or the needle may be too small, or too short.

Prognosis may be considered from two points of view: Immediate and ultimate. From the immediate point of view the pneumococcus empyemata are generally benign (mortality about 10 per cent.). Vanvert's statistics show the same results in operated cases and in those not operated upon. There is no doubt that intervention is left too late in many cases. Streptococcus infections show a mortality of 75 per cent. Ultimate prognosis is dependent much upon degree of pulmonary sclerosis and thoracic retraction which have so much to do with the mechanics of respiration.

The *therapeutics* must also be considered from two points: Immediate treatment, and subsequent treatment. One must be guided by the nature of the pleurisy. If it is a pneumococcus pleurisy, aspirate. This or a second aspiration may be all that is necessary, but if the temperature remains elevated, and the effusion re-forms, thoracotomy should be performed with or without

costal resection, draining without flushing. In streptococcus pleurisy, one should immediately resort to thoracotomy with flushing. Those due to the bacillus of Koch should be interfered with as little as possible, being content with repeated aspiration, should this be needed. Putrid pleurisy should be treated by large, free opening and abundant flushing.

A purulent pleurisy, whatever its nature and however treated, is almost always fatal during the first year.

Once the pleural cavity is evacuated and the general condition ameliorated, one should recommend acrotherapy and suralimentation, with reconstructive tonics, and later order suitable gymnastic exercises to overcome possible thoracic contraction.

Operation offers the greatest hope of recovery. When a positive diagnosis has been made and there is a persisting thyroid intoxication, medical treatment unless markedly beneficial should not be continued long before operation is resorted to. The only contraindications in an uncomplicated case are a feeble heart with a very high pulse frequency, or pronounced psychic excitation.

THE TUBERCLE VIRUS IN COLD ABSCESES.

Two interesting articles have recently appeared in Brauer's *Beitrage zur Klinik der Tuberculose* on methods of demonstration of the tubercle virus in the contents of cold abscesses.

The work was done in Von Behring's laboratory at Marburg, but has not yet been confirmed by other workers. Injection of the abscess material into a guinea-pig caused death from tuberculosis in about six weeks. The same pus heated to 80 deg. Centigrade for one hour did not cause death. As is usual in the case of smears made from cold abscess material, the ordinary methods of staining revealed no bacilli, but by means of special staining methods, which are described in the papers, small granules were demonstrated, some singly, some arranged in rod-like forms. Control smears were made from pus which formed by putting a sterilized sliver of wood underneath the skin of guinea-pigs and mice. These smears do not show the granules.

This work was done as the result of the examination of tubercles in the lung of a guinea-pig which had been injected with tubercle bacilli of known virulence, which tubercles, on section, showed no bacilli. By special staining methods, both in the tubercle and in the lung tissue near the tubercle, these small granules were to be found, some as single or paired granules, others in rod-like forms. No definite tubercle bacilli could be demonstrated. Bacilli were recovered from the second guinea-pig injected with lung tissue

containing these tubercles. Culture experiments are also described, showing the development of tubercle bacilli from the tissue containing these granules, and by the special staining methods described the granules were demonstrated on the culture medium (blood serum) for two or three days previous to the development of the tubercle bacillus in its ordinary form.

If this work is confirmed it will be of great assistance in the bacteriological diagnosis of tuberculous abscesses, for at present we have to depend upon guinea-pig inoculation, a matter of weeks.

J. H. E.

THE DIAGNOSIS OF EXOPHTHALMIC GOITRE.

LEWELLYS F. BARKER, in *Jour. Amer. Med. Assoc.*, Oct. 12, 1907, discusses this at length. Beside the three cardinal symptoms, of struma, tachycardia, exophthalmos, there are many other symptoms, some more important in diagnosis than the exophthalmos, because more frequent. In three of twenty-one cases no enlargement of the gland was discoverable. In about one-third of all cases there is no exophthalmos, and in the remaining two-thirds may be slight. Increased frequency of pulse is the most constant sign. It is usually over 90, and may exceed 200 beats per minute. There may be subjective palpitation, also throbbing of the carotids and abdominal aorta.

The enlargement of the gland is usually uniform, but as a rule not great. The lobular hyperplasia causes a characteristic granulation of the surface generally palpable. The vascular changes in the gland may cause (1) visible pulsation, (2) palpable, systolic expansion, (3) palpable thrill, (4) bruits audible at the entrance of the thyroid arteries into the gland.

There is a fourth cardinal symptom usually developing later, tremor. Psychic manifestations may be of diagnostic import, often occurring early. Emaciation is apt to ensue even when liberal diet is taken.

J. H. E.

Selected Articles.

NURSES FOR PEOPLE OF MODERATE MEANS.*

BY J. N. E. BROWN, M.B.

Superintendent Toronto General Hospital.

IN addition to the usual words of congratulation I should like to say something to the graduates of to-night concerning a certain phase of the nursing work in Toronto, leaving the questions involved therein as problems for your consideration, and, it may be, your solution.

It has been much brought before me of late that while two classes of our citizens are fairly well provided for in respect of nurses, namely, the wealthy and the poor—the former by the graduate nurse, the latter by the Victorian Order and nursing missions, there remains a very large class, the people of moderate means, who are by no means so well provided for. Please understand that I do not in this class include the unskilled labor classes, who do not (I fancy) and need not hesitate to avail themselves of the district nurses; but I refer to those who do clerical work, small mercantile and skilled labor classes, and those whose incomes range, say, from \$800 to \$2,000 per year. These are willing to pay, and certainly do not require charitable nursing aid, but, as one city physician states, "A very large class are able to employ a graduate nurse at \$18 to \$21 a week for a couple of weeks in an emergency, but find it altogether too great a drain on their resources to retain such an one through a protracted illness."

To secure the physicians' points of view in the matter, I submitted a list of three questions to a number of them. Forty-four replies were received from representative practitioners from all parts of Toronto.

The first question was, "Do you know of many people (who cannot be considered objects of charity) who, from financial or other reasons, are unable to secure the services of trained nurses? Please let me know what proportion of such families there are in your community." The replies to this varied according to the part of the city in which the writer practiced. Two Bloor Street physicians stated that they had not more than 5 per cent. to 10

*An address to the graduating class of the Training School of the Toronto Hospital for Incurables, March 19, 1908.

per cent. of such in their clientele. College and Carlton Street doctors give from 30 to 50 per cent. as about the proportion; while doctors practicing south of this line state that from 80 per cent. to 90 per cent. of their families are unable to afford a graduate nurse. Remember that the question excludes all purely charitable cases, and refers to those who constitute the main body of our citizens. In the light of such figures the answer to my first question is very apparent.

Question No. 2 was: To what extent is the need of such a class of people supplied by district or other nurses, and at about what expense? The replies indicate that the need is supplied to a certain extent by, first, the district nurses and Victorian Order, at prices commensurate with the purse of the families visited; second, by the working nurse, who is also called the untrained nurse and sometimes the "experienced" nurse, and who charges from \$7.00 to \$10.00; occasionally as high as \$14.00 per week.

These, they say, are usually women of middle life, of more or less ability, who often do exceedingly good work, who also are willing to help in the house. According to the replies received, these are viewed in some instances by the doctors as "doing as good work as a hospital nurse"; in others, as "a menace and a nuisance." But most physicians agree that in no instance are they to be compared in value to a trained nurse; yet they are largely in demand, because their charge is within the reach of the average Toronto income.

Medical men all testify to the value of the services rendered by the district and Victorian Order nurses; but their time is necessarily limited; they can make only brief daily visits, and while this is well in midwifery and certain other cases, it is not sufficient or satisfactory where the diseases are of a serious medical or surgical nature.

But the main objection to the service of the latter is that our average citizen feels that these are charitable organizations, and he has an instinctive pride that prefers not to make claim upon them.

A general practitioner on Bloor Street says that one of the registries will provide trained nurses who will attend midwifery cases, charging an initial fee of from three to five dollars, and subsequent visits at fifty cents each. It is not guaranteed, however, that the same nurse will follow the case through; she merely makes these occasional visits while she is waiting to be called to a case which will pay the regular rates.

The consensus of our replies to question No. 2 gives us to know that the majority of our citizens are compelled by reason of cost to make use of the services of the untrained nurse.

The last question was: Does any plan suggest itself to you as to what may be done to lessen any hardship this class of people may have in respect to nursing, (a) by hospitals or training schools, (b) by graduate nurses, (c) by visiting nursing organizations, or (d) by any other means you may think of.

A suggestion made by several of the correspondents is that there might be an arrangement by which nurses in training should be sent out into the homes, the people being asked to pay a specified fee for services; this, it is held, would give the nurse a wider experience, and teach them to adapt themselves to family environment; the change of work would stimulate interest in the regular hospital work; this visiting work to be under the supervision of graduate nurses. Another says, if a number of graduates were available as nurses in these homes for a short period after graduation, the results would be very beneficial to the people, to the hospital and to the nurses themselves.

One doctor says with an amusing combination of metaphors that the situation might be improved by constantly keeping before the minds of the undergraduates that they are entering a profession and not a trade; that, like medical practitioners, they should temper the wind to the shorn lamb and not exact the pound of flesh from all alike, meaning thereby that they should grade their charges to suit family needs. Of course, says another, it is a hardship to ask a nurse to take a case, devoting all her time at small fees, but this might be obviated by an endowment scheme to supplement the fees, and when nurses are off duty in the various homes visiting rates or at reduced fees, otherwise financial considerations will tend to make the ordinary experienced nurse the doctors' main assistant in all except wealthy patients' homes.

Another doctor says that the city might have a fund from which to pay the attending nurse, or some philanthropically inclined individual might provide a fund like the Straus' milk fund in New York City, from which nurses might be paid. Another doctor says that "an appeal might be made to the public for help for such a fund. A registry supported in some such way might be able to provide nurses at prices within reach of the great middle class. This would be a great boon. Some plan, however, would have to be devised which would guard against imposition and fraud, and which would make people in some way prove they were unable to pay the regular trained nurses' fees."

"It seems to me," another writes, "that properly trained nurses should be available at the rate of \$10 a week. There is no degree of seniority after graduation is once attained—one nurse is supposed to be as good as another. Let there be a classifying of graduates according to their standing in years or by a competitive examination. The junior graduates, or those who

stood lowest, could secure steady work among the middle classes at a lower rate than that now charged by graduates. It would be better for them to have steady work at a lower rate than fitful engagements at a higher rate." This writer maintains that when hospital training is over the great art of dealing with human nature is only just beginning. In his experience, the older nurse has a value far above the recent graduate, which to be appreciated does not need the prolonged observation, subtle as this difference is when attempting to describe it.

A Bloor Street physician writes:

"In the old days, before graduate nurses existed to any extent in most families, there were women, either maiden ladies or widows, who were tacitly admitted to be the ones to be sent for when anyone in the family circle took ill. These women never had any hospital training, but had a natural turn for nursing and were invaluable. Nowadays they seem to have passed out of existence. He thinks that if in any way such nursing could be again encouraged it would be a great blessing to the community. One way to do this would be by having classes like the St. John's ambulance classes of some years ago, in which women who had an inclination toward nursing could be taught some of the most essential things that they should know; making the beds properly, arranging the patient's toilet, preparing the food, taking the temperature, making poultices, etc. These women would in no way interfere with the practice of the graduate nurse, who will always be invaluable in all cases of severe illness, but they would often be of immense value to their friends and relations. This writer thinks that in addition to the doctors giving lectures many graduate nurses would be willing to deliver addresses to classes of these women and thus help greatly toward the lessening of human suffering."

"If the general public felt," says another, "that they could call a professional nurse who would give a portion of her time to the case requiring it, and would only charge for the time so occupied, I think possibly they might avail themselves of the services of such nurses to a greater degree. I do not think the people of Toronto recognize the value of trained nurses to as great an extent as do the people in American cities. The great bulk of those of moderate means, only in cases of great gravity, feel willing to pay the present rate asked by professional nurses fully trained.

"As a general practitioner who uses hospitals as little as possible, I am finding the best help by the teaching of cooking and dietetics to the young women of these families. When the rising generation of women are well trained in invalid cooking we

will be able to handle any case with a visit from a nurse for an hour a day."

So, we see, to sum up the opinion of the profession:

That the people of moderate means in the city are not well provided with trained nurses.

That it is desirable that they should be so provided.

That the work is in part done by nurses belonging to the Victorian Order, district nurses, "experienced" nurses, so-called, and by occasional graduate nurses.

That training schools might send out nurses to these families; this to constitute a part of their training, a fee being charged commensurate with the work done.

That the work might be done by graduate nurses, a fund being provided by some one to supplement the fees they would receive from the patients.

That we might resort to the resuscitation of the old type of family relative nurses, who would receive gratuitous instruction from medical men and graduate nurses.

That there is here a large field for nurses who are not as fully and as widely trained as the graduates of training schools with a three year course.

And further, that the work is one which is appealing more and more to graduate trained nurses who are not kept employed in the wealthier homes.

I have to-day learned from a nurse of another means apparently unknown to the doctors who replied to my queries, by which this want is commencing to be supplied, by an institution at which are registered the so-called "experienced" nurses and mothers' help, graduates from the smaller Canadian and American training schools, and of undergraduates, who, for good reason were not able to finish the regular course of training. The number of nurses on this list is thirty-five, and the work that they do is mostly among people of the middle class, who are able to pay less than the amount asked by graduate nurses.

Another fact my medical correspondents did not seem aware of has also been communicated to me—that in one of the larger registries in which some 250 trained nurses are registered, those lowest on the list, when not busy, will respond to calls from middle-class and poor families at reduced rates.

We may conclude, then, that the need of trained nursing in the homes of people in moderate circumstances is being felt by both the medical and nursing profession, and that an effort is now being put forth to supply it which should receive the greatest possible encouragement.—From the *National Hospital Record*.

NOTES ON NEURASTHENIA.

BY FREDK. J. HICKS, M.A., M.B. OXON., etc.

IN the everyday practice of the gynecologist there is frequently met with a class of cases which, for want of a better name, may be designated as those of atony in regard to marital obligations in the female sex.

In the above designation dyspareunia is not included. This belongs to quite a different category, and its causes are generally local and easily ascertained, and accordingly removable. Nor has it anything to do with the question of sterility. In one patient I had to attend, coitus was followed by profound nervous shock and intense pain in the region of the ovaries, which necessitated morphia injections, but this patient was the mother of two children, and in both cases the pregnancies and parturitions were natural.

The condition referred to may also have many local causes, but when these have been removed by treatment suitable to each individual case, and this is so important a matter that no specific treatment can be effectually tried until it has been done, the apathy remains which, while it may not have anything to do with sterility, yet is a powerful factor against domestic happiness, as is much too insufficiently recognized, and is also an almost certain precursor of those very same ailments which originally brought the patient to her medical adviser.

The causes of such a condition are often obscure and difficult to investigate, the more so as the mere questioning may lead to the suspicion of pruriency, and reticence on the part of the patient is the natural outcome of the mode of education, wrongly based on one of the early chapters of Genesis, that the conditions of sex are to be regarded as something to be ashamed of.

But while the causes may be purely neurotic, psychic, or emotional, or inherited, they are generally to be looked for in the direction of, or perhaps it should be said estimated by, the intensity of the special senses, and more particularly in that of touch, which varies in individuals much in the same way as are the known variations in the power of seeing colors and detecting odors, to mention the two most frequently noticed aberrations from the normal.

This being the case it is evident the treatment has to be something other than local.

Of aphrodisiacs there are plenty so-called, all more or less useless, even in the male, for whom they are always in the main designed, and if generally useless here, they are more so for the purpose above mentioned. In speaking of the latest of these

drugs, viz., yohimbin, in a case recorded in the *Reichs-Medicinal-Anzeiger*, July 7th, 1901, Dr. Schalenkamp remarks that the drug had no effect in producing sexual feelings, etc., in the female.

It can easily be imagined that in a condition the causes of which are obscure, the treatment must be mostly empirical, and it is not, therefore, to be wondered at that the unknown effects of electricity in its many forms of application, direct current, faradisation, high frequency, etc., etc., should have been largely tried and highly advertised, but I have yet to learn that any good whatever has been effected in the direction I have spoken of.

There is, however, one drug that I have employed for many years with undoubted benefit in these cases, and this is the fluid extract of the root of muirapuama (*Liriosma ovata*) a Brazilian plant which I became acquainted with during my practice abroad in association with Portuguese medical men, and which in my hands appeared to be a mere tonic of the highest order. Preparations of phosphorus, and especially phosphorus itself, also seemed very beneficial, though much more uncertain, and often not well borne.

It was, therefore, a convenient discovery when I came across a preparation of muirapuama with leithin, under the name of muiracithin, and I forthwith tried it in sundry cases where the condition was, I may say, typical, and I have found it a perfect remedy in the neurasthenic condition, which is an invariable concomitant in these cases, and also on several occasions to have the specific effect required as well. I have generally prescribed the muirapuama in the form of the liquid extract in full doses of one drachm, in combination with an acid tonic and syrup of orange. In the case of muiracithin, this is already in the form of silvered pills, which I found to become readily disintegrated when macerated in cold water.

For neurasthenia I got good results with one pill thrice daily, but I occasionally pushed the remedy to six pills in the day, which seemed necessary to produce the specific results desired, but this should not be done till after a more or less prolonged course of the smaller dose. In no case is it of any use to try specifics until the general health and, especially, the digestion have been properly attended to, in addition to the removal of any local causes, and it is not, therefore, a medicine that can well be placed in the hands of the general public as an everyday *pick-me-up* or tonic.

Unfortunately, owing to the alterations at the British Medical Association Buildings, I have no access to a library or reference, and so am not able to mention other reports, but the pamphlet, issued by the sole agents for muiracithin, gives a list of those who have written about the drug and its effects.—*Medical Times and Hospital Gazette*.

The Canadian Journal of Medicine and Surgery

J. J. CASSIDY, M.D.,

EDITOR.

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Doctors will confer a favor by sending news, reports and papers of interest from any section of the country. Individual experience and theories are also solicited. Contributors must kindly remember that all papers, reports, correspondence, etc., must be in our hands by the first of the month previous to publication.

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No. 1.

Editorials.

EMPIRICAL EMPLOYMENT OF DIPHTHERIA ANTITOXIN IN CEREBRO-SPINAL MENINGITIS AND PNEUMONIA.

DR. PORTER (*Post-Graduate*, May, 1908) reports four cases of cerebro-spinal meningitis treated by him with diphtheria antitoxin. He writes: "While the histories of these four cases are more or less irregular, the diagnosis seems justified by the general train of symptoms, Kernig's sign, and by the presence of the

diplococcus intracellularis—assuming that the presence of this particular diplococcus is as absolutely diagnostic of this particular disease as the tubercle bacillus is of tuberculosis.”

It appears that in Dr. Porter's cases diphtheria antitoxin was practically the only remedy used. In the first case 25,000 units were given; in the second case 10,000 units; in the third 10,000 units; in the fourth 15,000 units. The first, third and fourth cases terminated in recovery; in the second case, diphtheria antitoxine was not given until the disease had lasted for some three weeks, and the patient died. In the three successful cases, in which antitoxin was used early, the remedy seemed to cause at first a slight augmentation of all the symptoms, followed, in a day or two, by a progressive subsidence, which carried the intensity of the disease to a lower level than before the antitoxin was administered.

Dr. Porter offers no explanation for the curative action of the antitoxin in cerebro-spinal meningitis, classing it as an empirical remedy. None the less effective on that account, the rationale of cure may be obscure, the result eminently satisfactory. In May, 1901, we reported, in an editorial note in this journal the successful employment of diphtheria antitoxin in pneumonia. The note was founded on a report made by Dr. Talamon, Bichat Hospital, Paris, February 22nd, 1901. He had treated fifty cases of pneumonia, with seven deaths, and forty-two of his cases were undoubtedly alcoholics. The beneficial effects of the antitoxin were all the more marked in proportion to the early use of the serum. Defervescence began on the second day by lysis and not by crisis. Dr. Talamon injected hypodermically 20cc. of Roux's antidiphtheritic serum, morning and evening, until improvement was noted. He offered no logical explanation of the rationale of cure in a form of pneumonia usually fatal, but thought that the antidiphtheritic serum, acting on the cells of the organism, had an excito-phagocytic action, which is favorable in the treatment of infectious diseases. These results seem odd, and some practitioners may be inclined to doubt the therapeutic results obtained by Dr. Porter and Dr. Talamon. French ("Practice of Medicine," A.D., 1905, p. 130) writes as follows: "The antitoxin treatment of diphtheria is of benefit only in true diphtheria. Its action is limited to the neutralizing or antago-

nizing of the toxin produced by the Klebs-Löffler bacillus, and it is absolutely useless in streptococcus or other forms of infection." In the light of the evidence given by Dr. Porter and Dr. Talamon, Dr. French may, in a third edition of his valuable work, modify the absoluteness of his dictum. Dr. Talamon's results in pneumonia are most encouraging, and Dr. Porter's results in cerebro-spinal meningitis, though equally empirical, call for imitation.

J. J. C.

THE TWENTY-EIGHTH ANNUAL MEETING OF THE ONTARIO MEDICAL ASSOCIATION.

PERHAPS the most enjoyable, and without question the largest and most successful, meeting in the history of the Ontario Medical Association took place at Hamilton, Ont., on May 26, 27 and 28.

The 28th annual meeting of our Provincial Association was held under the Presidency of Dr. Ingersoll Olmsted, who filled the office with dignity and success. The meeting took place in the Normal School, Victoria Avenue South, a splendid building, and a credit to the city of mountain fame. This building is well lighted and ventilated and has good acoustic properties, and was a happy choice on the part of the Committee of Arrangements. The list of addresses, the papers read and their discussions, the symposium on "Arterio-Sclerosis," were all of a very high order. The programme of entertainments was full to overflowing, and the committee in charge of this are to be congratulated upon their success in affording such pleasure to the visiting physicians. Perhaps one of the most enjoyable functions during the meeting was the happy thought of President Olmsted in entertaining at dinner, at Hamilton Club, on the evening of Tuesday, the class who graduated with him at Toronto School of Medicine in 1886. The meeting of one's classmates, after a lapse of twenty-two years, was indeed a pleasure of no mean order. The President's address, delivered on Tuesday afternoon, was practical, and we reproduce it in this issue. As to the report of the meeting, which we had hoped to give our readers the benefit of this month, we extremely regret that the arrangements we made in this connection, due to no fault of ours, fell through. This, however, will

not in any way interfere with our printing quite a number of the papers during the next few months, which, perhaps, in the end will prove more acceptable, as society reports are, at best, somewhat dry.

The total attendance at Hamilton numbered a little over 300, which "speaks volumes" for Dr. Olmsted and his associates, who one and all worked very hard for a year to make the 1908 meeting, as it turned out, the banner one. The following are the list of officers elected for 1908-1909:

President—Dr. H. J. Hamilton, Toronto.

1st Vice-President—Dr. R. R. Wallace, Hamilton.

2nd Vice-President—Dr. A. Dalton Smith, Mitchell.

3rd Vice-President—Dr. A. M. McFaul, Collingwood.

4th Vice-President—Dr. George Field, Cobourg.

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Publication—Dr. Chas. Sheard, Toronto; Dr. Hadley Williams, London.

By-laws—Dr. James Third, Kingston; Dr. F. G. Sutherland, St. Catharines.

Ethics—Dr. Jno. Sheahan, St. Catharines; Dr. A. B. Osborne, Hamilton; Dr. H. R. Casgrain, Windsor.

The place of meeting next year will be Toronto.

W. A. Y.

THE INSPECTION OF DOMESTIC WELLS.

IN Bulletin No. 149, Mr. McGill, chief analyst of the Inland Revenue Department, Ottawa, makes a plea for wells so constructed that no water can find entrance to them, without filtration through a depth of soil at least equal to the vertical distance between the ground level and the lowest level of ground water. To insure this, it is necessary to have the mouth of the well

raised a foot or more above the surface of the surrounding soil, and to have the brick, or stone, lining of the well backed up by a layer of puddled clay, a foot or more in thickness, and extending continuously from the level of the ground water quite up to the mouth of the well. By this construction, surface water is prevented from getting into a well until it has percolated through the earth to the line of level of the ground water. If, in each topographical area of Canada, there were a few thoroughly protected wells, of known depths, and of whose history a full record had been kept, the work of a well-water analyst would have a sure basis, and greater value would attach to the findings of chlorine, alkalinity, etc.

Details are given in the bulletin of the analysis of 32 wells in Weston, 32 wells in Richmond Hill, and 64 wells in Oakville, Ontario. The analyses show the chlorine per million parts, the alkalinity, the permanent, temporary and total hardness, in each sample of water.

Mr. McGill advises the municipalities named to complete the investigations started by himself. He says: "The town of Oakville probably contains over 500 wells. Thus, it will be seen that the sampling of 64, selected almost at random, and examined only once, cannot be regarded as more than a very superficial treatment of the question." Mr. McGill's remarks are opportune and are in keeping with advice repeatedly given by the Ontario Board of Health. Ever since its establishment that Board has shown that typhoid fever is caused by foul wells in country places, villages and towns. Worse still, city people, who go to the country for their health, sometimes bring back typhoid fever caused by the consumption of water drawn from unprotected wells.

It is creditable to Toronto to provide for the filtration of the civic water supply, which, now and for many years, has been polluted with colon bacilli. But even if a water filtration by-law should pass, and even if a practical filtration plant should be installed here, typhoid fever would not cease to appear in this city. Not to mention cases of that disease caused by defilement of food by flies, allowed to feed in open privies, what does our Local Board of Health know about the condition of wells on the dairy farms from which the Toronto milk supply is sent? Is it

known that these wells show no signs of fecal contamination? Are they, in every instance, 100 feet from privy vaults, stables and cow yards?

The Bulletin of the Chicago School of Sanitary Instruction, May 16, 1908, says, in reference to the wells on the dairy farms supplying milk to Chicago: "The dug wells in which the water passed inspection, in every case were lined with cement, and had water-tight cement covers on them, with a cement protecting flange, extending several feet from the well, near the top. Some of the wells, the water of which was being used for domestic purposes and for washing cows on dairy farms, were found to contain a high percentage of colon bacilli, and in some cases, the presence of cow manure could be detected microscopically and by the odor."

A civic by-law providing, among other regulations, that no dairyman should be allowed to send milk to Toronto, unless the wells on his farm were properly constructed, would not cost Torontonians anything; but would materially prevent outbreaks of typhoid fever here and elsewhere.

J. J. C.

THE CHICAGO MEETING OF THE AMERICAN MEDICAL ASSOCIATION AN INSPIRATION.

THE meeting of the American Medical Association in Chicago, June 2 to 5, speaks for itself and goes down to history as crowned with wonderful success. The physicians fairly thronged the down town portion of the city, causing one breezy newspaper to comment in truly western style thus:

"To-day Chicago is the best fortified city in the United States against disease. The microbes and germs have withdrawn in a disorderly retreat to the suburbs, from whence they watch sullenly the possession of the city by their traditional enemies. The casual pedestrian could safely step up to the man next him on the sidewalk and say: 'Beg pardon. Will you kindly assist me with my unilateral nystagmus?' And the stranger, in a true neighborly spirit, would whip out his little surgeon's case, deftly perform the operation, murmur 'It's nothing at all,' and catch the next car to the meeting to discover the 'surgical im-

portance of cervical ribs.' That's how thick the doctors are in Chicago for the meeting of the American Medical Association."

The attendance, almost 6,500, the enthusiasm, the many present at each of the various sections, the diverse medical matters discussed, the perfect arrangements, the delightful social side with friendships renewed, all these elements made the 1908 meeting worthy of praise without stint.

Would that every Canadian physician had been there to further swell the ranks. May we not be termed a dreamer, nor our wish a day-dream, that ere long we may form an alliance of medical interests, a great meeting every year of the American-Canadian Medical Association, where the parallel lines that have so long run side by side, but can never meet, may fade away, and a circle be formed, a round table of students gathered closely near the light of the twentieth century lamp of science and research. Think of it, dream of it, accomplish it. We Canadians have been altogether too content with the humble prayer meeting spirit: the two or three gathering together as a matter of duty and looking for a blessing, and calling it a medical association meeting; the photograph is not a flattering one, but the negative is true to life. One hundred and eighty, or possibly two hundred, bodies and minds at the Ottawa meeting this year out of a population of six millions, and people say a doctor to every hundred, as a rough estimate. Let us destroy the negative. It isn't worth printing from. At the opening meeting in Chicago the large auditorium theatre was crowded, and perhaps never before have the members enjoyed so well listening to the various speeches of welcome and greeting, and to the presidential address, as not one word was lost, owing to the acoustic properties of the theatre being simply perfect.

The new president, Dr. Burrell, of Boston, delivered a bright, interesting address, nothing hackneyed. He dwelt principally on the topics of to-day, letting the past speak for itself, and looking forward to a wonderful (revolutionary in many respects) future being in store for medicine. The necessity for pure water, pure food, hospitals not alone for the sick poor, but for the dissemination of knowledge, medical enlightenment of parents to prevent them from sending their children to the neighbors to "catch something," so they could all "get it over" together,

public lectures on the prevention of disease, on sanitation, the inspection of school children and of employes in large stores and factories (which has been successfully carried on in some large stores in Boston), where, if a salesman falls behind in his usual amount of sales he is examined to see if physically he is not up to the health standard, were some of the vital subjects ably and convincingly handled by Dr. Burrell. He also rendered tribute to the country doctor, the all round old family practitioner.

The president also recommended articles written on medical subjects to be contributed to the lay press. With many others we feel that this departure would not be expedient at least in Canada. Many would read intelligently and benefit, others from curiosity, and perchance hoping to save a doctor's bill, ignorantly experimenting with serious, even fatal results. The foreign element in our cities would read, or listen, while others read, with awe, and feel the disease spoken of making immediate headway all through their anatomy, reminding us of the little girl who recited with gestures, and always pressed her hands tightly over her right thorax, and went on reciting about the pain and grief in her heart. May we add that Dr. Burrell's address was so full of marching orders to the work to be done that to all it must prove a constant inspiration.

" Thus by design or chance did he
Drop anchor to posterity."

The oration on Medicine was given by William S. Thayer, of Baltimore, and on Surgery by George W. Crile, of Cleveland, and were worthy of the men and of their theme. It may show a little the tendency of the medical men of to-day to look with longing eyes toward surgical skill, when we say that the surgical section held in Orchestra Hall, capable of seating about 2,500, was filled, and such men as Mayo, Murphy, Ochsner, Rodman, Bryant, Wyeth, etc., taking active part in the discussions. The question almost asserts itself. Are too many of our finest physicians forsaking the ranks to become (exclusively) surgeons? Their skill is undoubted, and it is not from that standpoint that we ask the question; but, if the fad of the hour, to have an automobile and an operation, should subside, and the public should refuse to be operated on, will not the pendulum swing backward again in a few years and the old family physician come again

into fashion with his good advice, and his quiet, determined "don't" become again a word to conjure with?

The American Medical Association will meet next year in the City beside the Sea, that most delightful place—Atlantic City.

W. A. Y.

THE AMERICAN MEDICAL EDITORS' ASSOCIATION.

WITH bright sunshine, all Chicago *en fête* in the streets to witness a giant (Decoration Day) procession, headed by veterans and "Grand Army" men, numberless bands playing national airs, and many sights, sounds and scenes to distract the attention and occupy the mortal mind, the quiet company of medical editors shut out the world and assembled in a ballroom of the Auditorium Hotel, arranged suitably for the meeting. A friendly lot of men who came to learn something, gentlemen by nature, physicians by profession, and editors by fate or chance, and not one of them who did not carry as gracefully as if by heredity this trinity of graces.

Dr. Charles Taylor, of Philadelphia, presided, and Dr. Charles Macdonald, the capable, was secretary.

The President's address was practical and conversational in style, covering and illustrating his ideas of editorial office work. Dr. Taylor's never failing courtesy and infinite patience have made for him a host of friends among his confreres.

Dr. MacDonald gave a very concise paper dealing with the business department of an editor's office. Many papers, short and to the point, and some very interesting discussions took place. It was to the pilgrim from Canada, a pleasure, a privilege and a short post-graduate course to be present.

An orator recently said that the spirit of the age in America was "cupidious acquisition." (We think he coined a word.) But, if the love of gain does hold sway in some callings, we were forcibly struck by the lack of that spirit shown by the American medical editors. In every paper an idealism or a sentiment akin to the sacrificing of the pennies to the little silent god, the worshippers at whose shrine crave the blessing of wisdom only, and the power to disseminate knowledge clearly, concisely and convincingly.

W. A. Y.

EDITORIAL NOTES.

Laboratory of the Inland Revenue Department, Ottawa, Canada, Bulletin No. 150.—In this bulletin, Mr. McGill, chief analyst, gives the results of the examination of ninety samples of canned salmon collected in February, 1908. The collection consisted of six samples taken in each inspectorial district of the Dominion. All the samples were found to be in good condition and true to name. It is gratifying to read such a report on the condition of a food product, which has sometimes been viewed with suspicion by the public. The results of the analysis are creditable to the salmon canners of Canada.

Demise of the "Indian Lancet."—We notice, with regret, that "there will be no more issues of the *Indian Lancet*, after the 27th of April, 1908." The *Indian Lancet*, Calcutta, which made its first appearance as a monthly, January 1st, 1892, and two years later, was changed into a fortnightly, was issued as a weekly since January 1st, 1901. During the last ten years or so, since we became acquainted with our Calcutta contemporary, first under the editorial management of Dr. Fernandez, and more recently under that of Dr. Monnier, we have read the *Indian Lancet* with pleasure and profit. The circumstances which produced its demise being unknown to us, surmise would be useless. We would fain hope that it may prove to be only a case of suspended animation, and, that under favorable auspices the talent and enterprise put into the *Indian Lancet* may not be irreparably lost to the medical profession and the people of India.

Typhoid Fever in India Due to Unfiltered Water and Defective Drainage.—Referring to an increase in the death rate from typhoid fever in Calcutta and its environs, the *Indian Lancet*, April 20th, 1908, says: "Very many cases of enteric fever are reported as 'remittent fever,' etc., and are not correctly diagnosed. The mortality of enteric fever out here is not very high—10 per cent. being the average. Europeans are more susceptible to this disease than Indians. Defective drainage and deficient filtered water supply are the two most potent causal factors of this malady. Typhoid and cholera are easily preventable dis-

eases, and improved sanitation is the keynote to their eradication.”

A Diminished Consumption of Liquor in Canada.—Internal revenue figures show a large decrease in the consumption of liquor in Canada. For the months of November, 1907, to April, 1908, inclusive, the aggregate internal revenue receipts from the liquor traffic show a decrease of nearly \$450,000, or over 10 per cent. The decrease in the receipts for April, 1908, as compared with April, 1907, was 20 per cent. A shrinkage in the quantity of liquor manufactured in the United States amounted, in the first ninety days of 1908, to 25,000,000 gallons, 60 per cent. of which was for whiskey production and 40 per cent. for beer. This decline in the liquor and beer production of the United States is unprecedented. The present financial stringency may account in part at least, for the lessened consumption of alcohol in both countries; but the swelling of the prohibition wave seems to be a more potent factor. In the Southern States it is a question of keeping liquor from negroes, just as in Canada it has been necessary to make it unlawful to sell liquor to Indians. In the Western States and Provinces, prohibition is often an economical necessity, in order to prevent farm hands from obtaining liquor and getting drunk, at times when the crops have to be saved. An American railway company has adopted a policy in promotions, or in weeding out, where reductions on the force are made, of giving preference to total abstainers. Another railway has gone still further, and will employ abstainers only, in certain classes. Employees are signing the temperance pledge, chiefly as a means of retaining their places. Employers of labor in warehouses, manufacturing and trade establishments ask for clerks, who are abstainers. The age is a strenuous one, and the doctrine of the survival of the fittest is in the air. Employers will pay well for the best skill or talent; but not if it is weighted down with intemperance. Hence, it is unlikely, that a return of good times would increase the sale of alcohol in America and Canada. From the standpoint of reason, it is preferable to see total abstinence inculcated through economic necessities than through appeals to the emotions. At all events, the actual shrinkage in the consumption of liquor and beer in America and

Canada can be looked upon with satisfaction by all, except, of course, the distillers and brewers.

An Act Respecting Proprietary and Patent Medicines.—From a medical standpoint, the chief interest felt in the new Canadian Act respecting proprietary and patent medicines attaches to the list of forbidden drugs. This list (Schedule A) is as follows: Acetanilide, aconite and its preparations, arsenic and preparations containing it, atropine, belladonna and its preparations, cantharides, carbolic acid, chloral hydrate, chloroform, cocaine and its preparations, conia and compounds thereof, corrosive sublimate, cotton root, croton oil, digitaline, ergot, essential oil of mustard, ether, hellebore, heroin, hyoseyamin and its preparations, Indian hemp, morphine and its preparations, nuxvomica, opium, its preparations and derivatives, pennyroyal, phenacetine, prussic acid, savin and the preparations thereof, strychnine and its preparations, sulphonal, tansy, tartrate of antimony, veratria. According to subsection C, section 7 of this Act, a proprietary patent medicine, containing any drug included in the above list, may be manufactured, imported, exposed, sold or offered for sale, if the name of the drug is conspicuously printed on an inseparable part of the label or wrapper of the bottle, box, or other container. This means that the public are to be allowed to purchase patent medicines containing any one of the above-mentioned drugs, if the name of the drug confronts the purchaser on the label of the bottle, box or other container. To illustrate: Mrs. Winslow's Soothing Syrup for Infants may be sold without restriction, if the word morphine appears on the label of each bottle of this preparation offered for sale. To prevent the consumption of proprietary or patent medicines, which are said to be used as alcoholic beverages, it is provided in subsection B, section 7, that no proprietary or patent preparation shall be manufactured, imported, exposed, sold, or offered for sale, if it does not contain sufficient medication to prevent its use as an alcoholic beverage, or if it contains alcohol in excess of the amount required as a solvent or a preservative. Provision is made for the analysis of patent medicines and for the remuneration of the analysts. Manufacturers or importers are obliged to furnish, each year, to the Minister of Inland Revenue a list of the medicines, which it is proposed to manufacture or import; on

payment of a fee of \$1 they procure a certificate of registration. The name and number under which a proprietary or patent medicine is registered with the words, "The Patent Medicine Act," and also the manufacturer's name and address shall appear on the labels of all proprietary or patent medicines intended for sale or distribution in Canada. Provision is not made in this Act for a revelation of the formulæ of proprietary or patent medicines to the Minister of Inland Revenue, neither is there any provision for the publication of formulæ on labels, other than what has been referred to above.

Cancer in the British Colonies.—In an editorial appearing in the *British Medical Journal*, May 2, 1908, p. 1067, reference is made to a report from the Natal Cancer Research Committee for 1906. The death rate from malignant disease among Europeans in Natal is given as 0.46, but it has to be borne in mind that only 3.4 per cent. of the European population in Natal, as against 5.9 per cent. in England and Wales, were in the age period—55-65—which provides the maximum mortality from cancer. That cancer is comparatively infrequent among the natives of Natal would, however, seem to be shown by the following facts: In a population of 930,000, with 12,255 deaths, no death was attributed to cancer. Again, the district surgeon of Mapumulo, a district with a native population, which, in 1905, was estimated at 32,082, states that no cancerous disease occurred in the district during the year. Here, too, the age factor must not be left out of account, only 13.7 per cent. of the Natal natives reaching the age of 40; as against 25.7 in England and Wales. Among the Indian population of Natal, estimated at 98,049 in 1906, only five deaths were certified as due to cancer. Only 1.7 per cent. of the Indians, however, were in the cancer-age period. With regard to British Guiana the total number of cases of malignant disease admitted into the Public Hospital, Georgetown, from April, 1906, to March 31, 1907, was 140. Among these cases, carcinoma of the penis and of the cervix uteri was particularly common."

J. J. C.

Proceedings of Societies.

THE CANADIAN MEDICAL ASSOCIATION.

THE 1908 meeting of the Canadian Medical Association, held at Ottawa, June 9, 10 and 11, was successful from many stand-points. The addresses, papers and entertainments filled the three days with profit and pleasure. The attendance was not as great as at some previous meetings, yet in the various sections good interest was shown and the rooms provided for section meetings were frequently overtaxed. This was most noticed in the Surgical Section. The papers presented at the association were of good quality, and after the first day discussions were often animated.

Some who promised papers failed to attend, and a few of these did not even send their communications to the secretary. It was disappointing that in one section, of six papers on the programme only three were presented. When papers have been promised it is surely incumbent upon the essayist to be present in person, and if not, at least to send his paper.

At the first business session the association representatives on the Executive Council were elected. J. C. Mitchell, Brockville, Chairman; R. W. Powell, W. I. Bradley, Col. Jones, A. T. Shillington, W. Hackney, Ottawa; G. E. Armstrong, F. A. L. Lockhart, E. P. Lachapelle, James Bell, Montreal; J. T. Fotheringham, R. A. Reeve, C. J. C. O. Hastings, J. H. Elliott, Toronto, and A. B. Atherton, Fredericton. The remaining members of the Executive Council are the representatives from the Provincial Association as provided for by the new constitution, by which the various provincial medical associations are constituent parts of the Canadian Medical Association.

The report of the special committee on an association journal was received. They recommended the publication of a monthly journal if the association could guarantee a subscription list of not less than 1,500 members at \$5 per year, \$3 of which goes towards the journal. The committee were discharged, and the matter is now in the hands of the Finance Committee, which is practically the business executive of the association, Drs. J. T. Fotheringham, F. N. G. Starr, Toronto; G. E. Armstrong, James Bell, Montreal; R. W. Powell, Ottawa. It was suggested by Dr. Bell that some of the leaders of the profession in Canada might

ensure the success of the journal by guaranteeing a fund for its support for a few years.

It is manifestly impossible to discuss the proceedings of the various sections into which the association divided, viz., Medicine, Surgery, Gynecology and Obstetrics, Mental and Nervous Diseases, Eye, Ear, Nose and Throat, Public Health, Laboratory Workers and Military Medicine. The papers were well up to standard.

The address in Medicine given by Dr. J. S. Risien Russell, of London, Eng., will not soon be forgotten. Those who have had the pleasure of listening to his teaching in London were delighted to welcome him to the meetings of the Association, while those who heard him for the first time when giving his address on "The Value of Reflexes in Diagnosis," were charmed with his fluent speech, his faultless English and his wide knowledge of the subject in hand. Before the sessions closed Dr. Russell was elected an honorary member of the Canadian Medical Association, an honor which has been conferred on few, and as far as we can recall, has not been conferred for ten years or more. Dr. Russell's fund of humor was shown to good advantage on the platform, in making his subject one which at times drew applause and laughter from his audience, particularly when he undertook to explain to the ladies present the subject matter of the address, illustrating the same, and recalling some amusing consulting-room experiences. The entertainments included, on the first afternoon, a reception at the Golf Club by Dr. and Mrs. Montizambert, assisted by Mrs. (Dr.) Kidd. The same evening the President read his address. His subject was "Hygiene," and Dr. Montizambert handled his theme in a clear and comprehensive manner. He opened his discussion with a consideration of the hygienic rules of primitive communities and traced the development of the science of sanitation from the earliest times up to the present date. In particular did he deal with the duties of the municipality and of the state in regard to the public health, and closed by urging the establishment of a department of public health in Canada. Sir Wilfrid Laurier, who was present, and spoke after Dr. Montizambert, assured his audience that he had heard all that Dr. Montizambert had said, and that he would mark and inwardly digest it. While committing himself in no way he gave it to be understood that he agreed with the speaker in all that he had said.

Dr. Montizambert went back into the realms of mythology and folklore for the origin of his subject. He spoke of the primitive belief which saw the machinations of an evil spirit in every ache and pain; of the gods of sickness and health in the Babylonian, Assyrian and Egyptian pantheons, and finally brought his

hearers down to Apollo, the patron god of medicine among the Greeks. Apollo, said the doctor, delegated his medicinal offices to his son, Æsculapius, and the rules of health had in turn become the especial province of his daughter, Hygeia. It was at her shrine that he proposed to pay tribute that evening.

Dr. Montizambert divided the history of sanitation into four eras: First, the domestic era, in which the centre of hygienic regulation was the individual household; secondly, the Roman or municipal period; thirdly, the Gothic or national period; and, fourthly, the international era, which had had its origin within the present generation.

The most perfect set of rules produced under the first era were, said the speaker, those attributed to Moses, and set forth in the Book of Leviticus. Than these no set of regulations better adapted to the people for whom they were prepared had ever been drafted. He spoke of the custom of primitive people in regarding dirt as something sacred, a frame of mind which, he said, had lasted down until mediæval times, when the hermits and ascetics had been in the habit of looking on pollution of the body as signifying purity of heart.

The individual family, said Dr. Montizambert, was still the great centre for the spread of hygiene. Public legislation was all very well, but in his opinion more could be accomplished by instruction in the home than by laws. "If," said he, "every citizen could be led to consider himself personally responsible for the public health, if every householder would see that his back-yard was kept in a sanitary state, and that his plumbing was in good condition, the work of the health officers would be immensely reduced.

In instilling proper rules into the minds of the children a great responsibility rested upon the mother of the family. Particularly, he stated, should the children be taught to breathe through their noses, to eat slowly and not to squeeze their waists. He insisted on the importance of proper covering for the feet, and decried the habit of exposing the chest and shoulders and unnecessarily swathing the lower limbs. The proper ventilation of the home was also, he stated, of the greatest importance, while too much weight could not be attached to the removal, not the mere disturbance, of dust. Ice, he held, should not be placed directly in refrigerators and water coolers, but put in a jacket surrounding the objects to be cooled. Finally, he insisted on the importance of good hours.

"Consequent upon the great improvement in the lighting systems," said he, "the young people of the present generation have fallen into the habit of turning night into day. This I regard as being responsible for more nervous breakdowns than any-

thing else. The hours of darkness were made for sleep. I fully believe in the truth of that old saying as to the relative values of sleep before and after midnight, and I just as fully disbelieve in that old saw which says 'six hours' sleep for a man, seven for a woman and eight for a fool.' Personally, I should be inclined to regard as the fool the man who could take eight hours and does not do so."

The doctor also decried the habit of indiscriminate kissing. To protest against the kiss of love and pure affection would be, he said, bootless and pure waste of time upon his part, as upon that of any man, medical or otherwise. What he did protest against was the habit of promiscuous kissing among ladies, and he further urged the abolition of the custom of loading infants with caresses.

The doctor closed his discussion of sanitation in the home with an appeal to his hearers to let the sun and fresh air into their houses. "It is," said he, "far better to have your carpets faded by the sun than to have your cheeks faded by sickness."

The members received a very warm welcome from Sir Wilfrid Laurier, Premier of the Dominion.

Sir Wilfrid extended a hearty welcome to the doctors, their wives and their lady friends. "I extend to you all," said he, "the warmest sort of welcome—as warm as our weather, and than that it is possible to say nothing more."

The Premier referred to a break-down from which he had suffered some five years ago. "At that time," said he, "I went to a local doctor, and asked for advice. What he told me can be put in a few words. 'No drugs; lots of rest and simple food.' Now, although I am not a medical man, I read something on the subject in my youth, and the prescriptions of which I had a memory were very different from that. When I went to London I thought that I would consult a specialist there and see that his advice agreed with that given by my Ottawa friend. I went, and there I was told: 'No drugs; lots of rest and simple food.' Shortly after that I was in Paris, and there I went to one of the lights of the medical profession. He told me exactly the same thing as the first two. After that I came back and placed myself in the hands of my Ottawa doctor. And, ladies and gentlemen, here I am.

"When you speak of the national government," he continued, addressing Dr. Montizambert, "I, of course, am unable to turn a deaf ear. The national government is always open to conviction, although sometimes somewhat slow about being convinced. It is, however, like the kingdom of heaven; by continually knocking at the door, the door is at length opened to you."

In regard to the establishment of tuberculosis sanatoria, the

Premier candidly stated that he would not commit himself. He said, however, that he and his ministers were always open to conviction, and that once the doctors had been able to convince them by their arguments they would be delighted to act upon the suggestions of the medical men.

On the second day the Canadian Pacific Railway placed a special train at the disposal of the association, and conveyed the members to Caledonia Springs, where they were served with luncheon, at which Sir James Grant addressed the members. That evening were delivered the address in Medicine, by Dr. J. S. Risien Russell, London, and on Surgery, by Dr. John C. Munro, of Boston, Mass. The last evening the members were entertained at a smoker at the Russell House, at which Dr. Russell returned thanks for being elected to honorary membership in the Canadian Medical Association.

Winnipeg was selected as the next place of meeting. Officers were elected as follows:

President, R. J. Blanchard, Winnipeg; Secretary, Dr. George Elliott, Toronto; Treasurer, Dr. H. B. Small, Ottawa; Finance Committee, Drs. Fotheringham, Toronto; Starr, Toronto; Powell, Ottawa; Bell, Montreal; Armstrong, Montreal.

Chairmen of Committees: On Medical Legislation, Dr. A. T. Shillington, Ottawa; on Medical Education, Dr. R. A. Reeve, Toronto; on Public Health and Hygiene, Dr. C. J. O. Hastings, Toronto; on Amendments to the constitution, Dr. H. B. Small, Ottawa; on Necrology, Dr. J. H. Elliott, Toronto. J. H. E.

ITEMS OF INTEREST.

The Medical Era's Gastro-Intestinal Edition.—The *Medical Era*, St. Louis, Mo., will issue its annual series of Gastro-intestinal editions, during July and August. In these two issues will be published between forty and fifty original papers of the largest practical worth, covering every phase of diseases of the Gastro-intestinal canal. Sample copies will be supplied readers of this journal.

The International Laryngo-Rhinological Congress.—Through the courtesy of Dr. D. J. Gibb Wishart we recently received a programme of the International Laryngo-Rhinological Congress. Judging, too, from Dr. Wishart's letter, the Congress must have been an immense success. The doctor saw some splendid throat work in Naples, Rome and other cities, finishing later by taking a special course in bronchoscopy at Freiburg and Heidelberg. Over twenty-five Englishmen attended the International Laryngo-Rhinological Congress, which was held at Vienna.

The Physician's Library.

BOOK REVIEWS.

International Clinics. A Quarterly of Illustrated Clinical Lectures and especially prepared original articles. Edited by W. T. Loxecore, M.D., Philadelphia, U.S.A., with the collaboration of William Osler, M.D., Oxford; John H. Musser, M.D., Philadelphia; A. McPhedran, M.D., Toronto; Frank Billings, M.D., Chicago; Chas. H. Mayo, M.D., Rochester; Thos. H. Rotch, M.D., Boston; John G. Clark, M.D., Philadelphia; James J. Walsh, M.D., New York; J. W. Ballantyne, M.D., Edinburgh; John Harold, M.D., London; Richard Kretz, M.D., Vienna. Volume I., eighteenth series. 1908. Philadelphia and London: J. B. Lippincott Company.

These volumes are divided into sections and Vol. I. of this series has especially interesting and practical departments devoted to Treatment, Medicine, Surgery and the Progress of Medicine during the year 1907.

In the section on Treatment an article by Dr. Darbel, of Savoie, France, on the "Treatment of Syphilis by the Injection of Soluble Salts of Mercury," and another by Dr. Dingwall Fordice, of Edinburgh, on "Some Records of the Value of the Oponic Tests for Diagnoses, and of the Employment of Vaccines in the Treatment of Certain Infectious Conditions," shows advanced work in these comparatively new fields of investigation.

In Medicine, Sir Dyce Duckworth, of London, England, writes very entertainingly on "The Personal Factor in Medicine, that is, the personal factor in the patient." He says: "We are much engaged with the seed, and are insufficiently mindful of the soil, for it is a question of seed and soil, and neither can be disregarded."

If we are to recognize easily the abnormal we should be especially familiar with the normal. This is well illustrated in an excellent article by Dr. R. D. Rudolf, of Toronto, on the "Normal Temperature of the Body." He has treated this common subject in an exhaustive and illuminative manner. Dr. Rudolf finds that the normal band may run from, say, 97.2 to 98.4.

In the Surgical Section, "Diseases of the Gall Bladder," by Dr. John B. Deaver, of Philadelphia, is very instructive. He

emphasizes the fact that gall stones do not exist for years without causing symptoms. Our duty is to interpret these aright. He insists that the danger in the removal of an ulcerated gall bladder, of a stone or stones from the common duct, is not great when compared with such sequelae as suppuration, chronic jaundice, cirrhosis or cancer of the liver or pancreas, with the possibility of diabetes, biliary fistula and gall stone ileus.

"Perforated Gastric and Duodenal Ulcers," by Benjamin T. Tilton, of Cornell, is treated quite fully. He is very conservative, and emphasizes the simple methods. He closes the ulcer with silk. After sponging or irrigating with normal saline, according to the severity of the case, he uses a cigarette drain passed down to the visceral suture. He does not drain the pelvis, and advises Fowler's position. He discusses at length the class of case in which surgical interference is most likely to succeed.

In Neurology, Dr. G. E. Walton, of Boston, writes on "Fracture of Spine." His illustrations are very clear, and he calls attention once again to the fact that complete destruction of the upper spinal cord produces not only loss of power and sensation below the lesion, but loss of reflexes as well. In the reviewer's opinion he hardly emphasizes enough the importance of early operation to relieve pressure on the cord.

The subject matter in the sections on Gynecology and Pathology is varied and deserving of careful perusal.

In the section, Progress of Medicine, 1907, the references and extended notices to all the latest advances wherever made, are almost encyclopedic in character.

The volume is very complete, deals extensively with many subjects, and will prove a splendid addition to any doctor's library.

J. N. E. B.

The Practical Medicine Series. Comprising ten volumes on the year's progress in medicine and surgery, under the general editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. I., General Medicine, edited by Frank Billings, M.S., M.D., head of the medical department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, A.M., M.D., Professor of Medicine, Chicago Clinical School. Series 1908. Chicago: The Year-Book Publishers, 40 Dearborn Street.

The present volume is one of a series of ten issued at about monthly intervals, and covering the entire field of medicine and surgery, each volume being complete for the year prior to its publication on the subject of which it treats.

While these volumes are published for the general practitioner,

they are so arranged that those interested in spinal subjects may buy the part or parts they desire. This volume contains 408 pages, and covers diseases of the respiratory organs, circulatory organs, diseases of the blood vessels, and of the blood and blood-making organs, general infectious diseases, diseases of the ductless glands, metabolic diseases and diseases of the kidneys.

A good deal of attention has been paid during the year to tuberculosis, and that the diagnosis may be made early all the newer aids are being used, *e.g.*, temperature range, the relative intensity of the breath and voice sounds over the upper and lower portions of the upper lobe of a lung, X-ray methods, vaccination with tuberculin, opthalmic reaction and opsonic index. Space will not permit us to particularize, but we can safely say the best work of the year in medicine is recorded under the various headings.

W. J. W.

The Horse: Its Treatment in Health and Disease, with a complete guide to breeding, training, and management. Edited by PROF. J. WORTLEY AXE, M.R.C.V.S., ex-President of the Royal College of Veterinary Surgeons; late lecturer at the Royal Veterinary College and at the Agricultural Colleges of Downton and Wye; Chief Veterinary Inspector to the Surrey County Council; Consulting Veterinary Surgeon to the British Dairy Farmers' Association; Author of "The Mare and Foal," "Abortion in Cattle," "Anthrax in Farm Stock," "Examination of Horses as to Soundness," "Glanders: Its Spread and Suppression," "Swine Fever," "Lithotomy, or the Removal of Stone from the Bladder of the Horse." Published in nine volumes. Divisional Volumes VIII. and IX. London, England: The Gresham Publishing Co., 34 Southampton Street, Strand, 1907. Canadian agents: D. T. McAmish & Co., Bay and Adelaide Streets, Toronto.

Perhaps one of the most instructive volumes of this capital series is Divisional Vol. VIII. It is devoted to Equine Locomotion, Breeding, Stables, Horse Training, Examination of Horses as to Soundness, The Teeth of the Horse and Warranty. The section that interested us most was that on Examination of Horses as to Soundness. This is, to an outsider and one who cannot claim to be a veterinary surgeon, perhaps, the most practical chapter in the entire work. The being able to examine a horse and to pronounce him sound or otherwise is most important and Professor Axe in his book points out how this can be done. The author goes into the examination of the eyes, nose, mouth and head; points out the defects in conformation and deformities, and teaches how to correctly make the necessary examination of the horse's legs, feet and wind. Under section 10, Professor Axe

goes into the details of the eruption of the teeth, and therefore the age of the animal, also a most important matter to the prospective purchaser.

Divisional Vol. IX. is devoted to Horse-shoeing, The Transit of Horses, The Horse and its Position in the Animal World, and closes with The History of the Horse, describing under this sub-chapter, The Grecian Horse, The Horses of Rome, The Horses of Asia and Africa and the Horse in Britain.

Again we take the opportunity of congratulating Professor Axe and the Gresham Publishing Co. on the exceeding excellence of the book and its high standard as a scientific publication.

W. A. Y.

Le Cancer, Prophylaxie—Étiologie—Traitement. Par LE DOCTEUR C. SOBRE-CASAS, Médecin de l'hôpital Rawson, Buenos-Aires. Paris: G. Steinheil, Editeur, 2 Rue Casimir-Delavigne. 1908.

In a work of 224 pages, published in French, Dr. Sobre-Casas, Rawson Hospital, Buenos-Aires, Argentina, tells what has been written on the prevention, etiology and treatment of malignant tumors. There are eight pages of bibliography.

In the chapter on prevention he shows what measures are being taken by the most civilized nations of the world, in order to prevent the disastrous consequences of cancer.

Under the head of etiology he describes the most important parts of the different theories, under which endeavors are made to explain the genesis of cancer. Under treatment he gives full accounts of all treatments used for cancer, with special references to surgical treatment, "the only one which renders real services." The results of treatment are shown by statistics.

It is a meritorious compilation, and deserves to receive the patronage of the medical profession. It should be translated into the English language.

J. J. C.

A Text-Book of Practical Gynecology. For Practitioners and Students. By D. TOD GILLIAM, M.D., Emeritus Professor of Gynecology in Starling-Ohio Medical College, and sometime Professor of Gynecology, Starling Medical College; Gynecologist to St. Anthony and St. Francis Hospitals; Consulting Gynecologist to Park View Sanitarium, Columbus, Ohio; Fellow of the American Association of Obstetricians and Gynecologists; Member of the American Medical Association, of the Ninth International Medical Congress, etc. Second, revised edition. Illustrated with 350 engravings, a colored frontispiece, and 13 full-page half-tone plates. 642 royal octavo pages. Extra cloth, \$4.50 net; half morocco, gilt top,

\$6.00 net. Sold only by subscription. Philadelphia: F. A. Davis Company, 1914-16 Cherry Street.

This work contains 642 pages, including the usual index and an index of regional symptoms, which is rather a new feature and one that may prove useful to many readers. The book is well written, has good, clear type and good paper. The author has been careful to keep down the size by excluding doubtful matter and making few citations of authorities. In fact the whole design is to make a work at once convenient, full and useful. It is divided into fifty chapters, varying from ten to sixteen pages each, is well illustrated, and covers the subject of gynecology in a most concise and satisfactory manner. Goffe's operation for extensive cystocele, and Watkins' operation for post-climacteric prolapse of the uterus are new and described fully in this the second edition.

We are very much pleased with the work and have much pleasure in recommending it to our friends.

W. J. W.

American Practice of Surgery. A complete system of the science and art of surgery, by representative surgeons of the United States and Canada. Editors, JOSEPH D. BRYANT, M.D., LL.D., and ALBERT H. BUCK, M.D., New York City. Complete in eight volumes. Profusely illustrated. Volume IV. New York: Wm. Wood & Co. 1908.

Volume IV. of this magnificent work reached us a few weeks ago. The more one looks into "American Practice of Surgery," the more convinced one becomes that it has been a prodigious undertaking. Volume IV. includes among its contributors such well-known writers as Freeman Allen, of Boston; Russell S. Fowler, New York; F. E. Garland, Boston; George Ben Johnston, Richmond, Va.; John M. Keyes, New York; Charles B. G. De Mancrede, Ann Arbor; Charles F. Painter, Boston; W. L. Rodman and John Stewart Rodman, Philadelphia; George David Stewart, New York; James S. Stone, Boston; Horace J. Whitacre, Cincinnati; Royal Whitman, New York; and last, though not least, our own popular Clarence L. Starr, Toronto. This volume consists of the continuation of Part XIII., dealing with Diseases and Injuries of Joints. It also includes Parts XIV. and XV., covering Operative Surgery and Orthopedic Surgery.

Under Operative Surgery, we find some splendidly written and well-illustrated articles on such subjects as "Influences and Conditions which should be taken into account before one decides to Operate" (an article teeming with common sense); "The Preparation for an Operation, the Operation Itself, and the Care of the Patient during and immediately after the operation," "Anesthetics and the Production of General Anesthesia," "The

Production of Local Anesthesia for Surgical Purposes," "Amputations and Disarticulations," "Excisions of Bones and Joints," "Ligature of Arteries and Veins in Their Continuity," "Minor Surgery" and "Plastic Surgery."

Part XV., covering Orthopedic Surgery, includes such subjects as "Congenital Dislocations," "Torticollis," "Infantile Paralysis," "Deformities and Disabilities of the Lower Extremities" and "Tuberculous Disease of the Spinal Column and the Deformities resulting therefrom." The last-named sub-chapter is from the pen of Dr. Clarence Starr, Toronto, and is exceedingly able.

After a short historical sketch, the section deals comprehensively with the pathology, both minute and gross, of the tuberculous spine, showing the changes which take place in the vertebral bodies, with secondary changes in the thorax and abdomen. Especial attention is drawn to the method of formation and character of the tuberculous abscess. This portion of the work is largely illustrated, for the most part by reproductions of cuts from Joachimsthal's *Handbuch der Orthopadischen Chirurgie*, with some original photographs from the author's own cases.

In the consideration of the etiology, interesting deductions are drawn from the series of tuberculous spines treated in the Hospital for Sick Children, in Toronto. The treatment covers widely the generally recognized principles of treatment of this disease of the spine, emphasizing especially the necessity for greater attention to the constitutional treatment. This is considered under the headings of: "Hygienic Measures," where a description of the out-of-door life at the Lakeside Hospital is given; "Dietetic Regimen," advocating similar attempts to improve nutrition and increase resisting power, as are advocated in pulmonary lesions; "Medicinal Treatment and Tuberculin Inoculation." The complete recumbency during the early, acute stage is insisted upon, and advised for a longer period than is commonly thought necessary.

The mechanical treatment is adequately covered, and details as to the method of application of plaster jackets, and the manufacture and adjustment of spinal supports for the various portions of the spine are clearly shown. The original work of the author in the treatment of abscesses is elaborately set forth and statistics of successful treatment shown.

The photographs illustrating this section are almost entirely original, being drawn from the Children's Hospital cases.

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NO. 2.

Original Contributions.

OBSTETRICAL TECHNIQUE.

BY FREDERICK FENTON, M.D., C.M.
Associate in Obstetrics, University of Toronto.

Mr. Chairman, Ladies and Gentlemen.—It is not my intention to take up this subject exhaustively, but rather to present a few points in the routine management of obstetrical cases for discussion. For the purpose of this paper I use the term technique to include all the routine procedures from the engagement to attend a confinement to the last visit. The subject naturally divides itself into three main heads, viz., Pregnancy, Labor and Puerperium.

The management of pregnancy should be placed in the physician's hands as soon as the woman realizes her condition, and the physician, on his part, should accept his responsibility, and be ready to instruct and direct his patient upon matters which it is well she should be informed for her own good.

Such matters as clothing, exercise, bathing, rest, diet, care of breasts and nipples, regulation of bowels, etc., are all of sufficient importance to warrant their being gone into in detail with the patient early in pregnancy. A little information on the subjective signs of the complication of pregnancy may be the means of leading many women to apply for assistance before it is too late. To do this requires the spending of time which it is not always convenient to take from other more pressing cases. To save myself, and at the same time do justice to my patients, I have been in the habit of supplying each patient with a small booklet giving the required information in concise form at the first consultation.

After trying various ways of supplying this information to each patient, in written or printed form, I have adopted the booklet issued by an American Supply House in which all this and much more useful information is contained. Some may object to this plan in that it would appear to be advertising that particular firm's goods, but the book supplies me with what I want without expense, and if indirectly the publishers reap benefit it is nothing to me.

By having such books available in sufficient numbers to hand one to every woman who engages me to attend her, I am saved the time necessary to explain things to her, and she doubtless has the points more firmly impressed upon her mind by frequent perusal of its pages.

Having provided her with this information, taken a brief history, including past illnesses, previous pregnancies and labors, and the present pregnancy, and posted in my diary the days on which routine urinary examinations are to be made, it will not be necessary to see her again till about the sixth month.

At about the sixth month it is my custom to visit my patient at her own home, or have her come to my office, when I make a general physical examination of the chest and abdomen including the taking of the external pelvic measurements.

This examination is directed especially to the detection of heart murmurs so far as the chest is concerned, and the estimation of the size of the pelvis and thickness and strength of the walls, so far as the abdomen is concerned. Where the external measurements of the pelvis suggest the probability of contraction or deformity, I proceed to the internal measurement, usually with the patient under an anesthetic. I make this physical examination at this time in order that I may be informed of physical defects or deformities sufficiently early, to admit of my taking measures which may be indicated in good time.

Under preparation for labor are included the physician's outfit, the patient's outfit and abdominal palpation.

It is not my intention to inflict upon you just what I think should be included in the physician's equipment for an obstetrical case, but I will say that in my opinion every man who undertakes to attend a labor should provide himself with adequate means and appliances for the proper handling, not only of the ordinary normal cases, but of the recognized complications as well, without any improvising.

Complications, which in the presence of suitable appliances and adequate preparation may give us little concern, may in the absence of these become most serious, with the patient taking all the chances. A professional man should not require to "send back to the shop" for anything, while his patient is in danger, nor be

driven to improvise surgical appliances out of household implements.

While there are many appliances which it is convenient to have in one's valise, though not absolutely essential, two or three little essentials might be mentioned which are frequently found wanting. Sterile gauze in sufficient amount to pack the uterus and vagina; transfusion appliances both intravenous and interstitial; means for the rapid preparation of a proper normal saline solution such as one would use if he had plenty of time to get ready, should, I think, always be found at hand ready for emergencies.

But the most elaborate equipment of instruments and appliances are of little avail unless one's technique is such as to maintain the genital tract in a sterile condition throughout the whole case. A plentiful supply of sterile sheets, towels, absorbent cotton, pads and such things should have been prepared by the nurse, or under the physician's direction by the patient herself before labor commenced, and liberal supplies of hot and cold sterile water must be available throughout.

It is a simple matter to secure boiling water in most houses in a very short time, but *cold* sterile water is a different proposition, and cannot be had at a moment's warning unless preparation has been made for it in good time.

Dr. J. B. Cooke, of New York, has, I think, solved this problem most satisfactorily. He has what he calls obstetric boxes always ready for use, each containing, amongst other things, a couple of gallons of cold sterile water, put up in a way that it cannot become contaminated. One of these boxes is sent to the house of his patient at least three weeks before the estimated date of confinement, and is thus ready for any emergency. I have found this plan a most admirable one, not only in the matter of supplying sterile water, but from the fact that the box can be made to accommodate basins, etc., which are too cumbersome to carry in one's satchel, and which at the same time cannot be obtained in a private house in the form in which one would like to have them.

With a well equipped satchel, an obstetric box, and a plentiful supply of sterile linen dressings, etc., prepared by the nurse in good time, one can very readily convert the patient's bedroom into a well appointed operating room, and be in a position to conduct a case to its termination in a reasonably sterile manner, even should complications unexpectedly arise. The possibilities and dangers of infection are at least as great in obstetrics as in other surgery, and the best results can only be obtained by the same thoroughness in detail that has made it possible for surgery to advance to the place it now occupies.

The advisability of an early recognition of the position and presentation of the fetus is a point upon which, I am sure, we are all agreed, but there does not appear to be a very general adoption of the plan of determining this matter by abdominal palpation, before labor has commenced. With a little practice anyone can become proficient in the diagnosing of position and presentation by this method, and while one will at times make mistakes or be unable to come to a definite conclusion, the errors and failures are infinitely less than by the ordinary vaginal examination during labor, while the information is obtained before labor has started which not infrequently is a matter of great importance. It is a fact that the position and presentation found by abdominal palpation a couple of weeks before labor not infrequently changes before the beginning of labor and the value of the information obtained thereby would appear therefore not to be great.

I have watched this phase of the question somewhat closely for some time, and find that the changes which occur in the last week or two, are in the vast majority of cases from what one might term abnormal to normal positions; thus while I have not infrequently seen a posterior position change to an anterior, and in a few instances a breech turn to a vertex, I have but rarely seen the reverse take place, so that I can feel reasonably certain that an anterior position will still be an anterior at labor, and if the suspected posterior has already rotated so much the better for my patient.

On the other hand I must confess that I do not like to place much reliance on the ordinary vaginal examination *early* in labor, while in difficult cases accurate diagnosis may be much interfered with later on by the formation of a caput succedaneum.

The routine use of abdominal palpation in the latter weeks of pregnancy for the recognition of positions and presentation, will demonstrate to anyone that occipito-posterior positions are far more frequent than we are usually taught, and my experience with such cases has been that failure to recognize such a position is responsible for as much difficulty during labor and invalidism afterward, as nearly all other complications put together.

I therefore feel that anything which will assist us in the early recognition of malpositions, because it is upon that that successful management depends, should be made a part of the routine management of every case.

To avoid delay at the time of the physician's first visit it is well to instruct the patient to take an enema, followed by a full warm bath as soon as she is satisfied that she is in labor; the nurse completing the preparation by disinfecting her from the umbilicus to the knees with whatever solution the attending

physician may prefer. It would be superfluous for one to go into the question of asepsis before the members of this association, but if I may I would express my own views that the mechanical sterilization with the use of rubber gloves is the most effective means of dealing with one's hands.

The routine use of anesthetics where pains are even moderately severe, throughout both the first and second stage, should, I believe, be as much a part of our technique in these cases as the watching of the urine in pregnancy or the sterilizing of instruments before use. Apart altogether from a humanitarian standpoint, which in itself is ample justification, the controlling of pain is so much in the interest of the patient that I am convinced that it should be undertaken as a matter of course.

Throughout the first stage morphia alone, or combined with hyoscine, should be administered hypodermically in sufficient doses to distinctly lessen the severity of the pains. It is well that no morphia be given within two hours of delivery, and if one follows the plan of withholding it after the beginning of the second stage there will be no difficulty on this score. In the second stage and in precipitate cases chloroform should be used.

Injuries of the pelvic tissues are of so frequent occurrence and of such far-reaching importance that all are agreed as to the necessity of their repair, and that need not be urged here, but there are one or two points which I feel are worthy of some discussion in connection with this matter because they have a direct bearing upon one's routine management of his cases. In the first place I believe that prolongation of the second stage of labor beyond a period of three hours increases the probability of laceration, and that the forceps, properly used, even where this be the only indication for them, will do much to prevent tearing.

Long drawn out labors are fraught with danger to both mother and child, not only because of the complication which causes the prolongation but simply from the fact that they are prolonged.

Another question which is of some interest to me is the time at which repairs should be done. Generally speaking one would unhesitatingly say, at once. There are two classes of tears, viz., those which injure the pelvic floor, and those which do not. I take it that we all repair the second class for the purpose of closing a possible channel of infection, while the first class demand attention for the restoration of the injured muscle and fascia. Acting upon this principle I have been in the habit of leaving important tears as a rule for twenty-four hours or even more, and proceeding with the stitching under the best conditions obtainable. There are many advantages in this plan, viz., absence of bleeding, rest in the interim for all concerned, opportunity for

resterilization of appliances, a choice of light and table with consequent greater exactness in the approximation of torn tissues and lessened danger of post partum hemorrhage from the administration of an anesthetic shortly after the separation of the placenta.

The Puerperium.—The routine use of the binder is general and time honored, and doubtless it does possess some virtues, but personally I am convinced that he who trusts to it to prevent hemorrhage is living in a fool's paradise. Rather than apply a binder for the prevention of what I considered a threatened hemorrhage I would specially direct in such a case that no binder be applied, but that the nurse leave the abdomen free for constant or frequent inspection as to the condition of the uterus.

As a support to the strained pelvic joints the binder is undoubtedly a great source of comfort to the patient, but as an abdominal constrictor for the prevention of hemorrhage it is, in my humble estimation, a failure, and applied as such a source of discomfort to the patient. Like the binder, ergot is fast losing its place in obstetrical routine, not that it is of no service—I am not prepared to go that length—but I do think that it is unnecessary.

Where the uterine muscle is feeble and contractions poor I believe ergot is indicated, and in large doses, but that is not the usual cause of hemorrhage, rather I think, must the cause of such be looked for in retained membrane placenta or clot, which appropriate treatment will remove, and with it the danger of hemorrhage and apparent indication for ergot.

The care and management of the infant I do not intend to go into, but one matter I feel should receive more attention from the physician, and that is the protection of the infant and the preservation of its body heat immediately after birth. A child which has been living in an even temperature of from 98 to 100 degrees is suddenly expelled into a temperature of perhaps 60 or 65 degrees, should receive some protection from currents of air during the time that the procedures necessary before it can be removed are being completed.

The only point I would emphasize in the management of the puerperium is the practical value of the regular recording of the progress of involution. Should the patient's temperature rise or other things suggesting sepsis make their appearance it may be of vital importance for one to be able to decide whether or not to explore the uterus. If involution is proceeding satisfactorily we have very good grounds for assuming that the uterus is not infected, and that therefore we are not only not justified in interfering with it but that such a procedure is distinctly contraindicated. We must look elsewhere for the septic focus. On the

other hand with a rising or stationary fundus with evidence of sepsis we not only may, but must proceed to the cleansing of the uterine cavity as soon as possible.

Of course to be of value a fundus chart, as with a temperature chart, must be regularly posted. The ordinary temperature chart answers the purpose perfectly, the 100 deg. line being taken as the fundus level, each degree above representing one inch.

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THE MORE IMPORTANT GERMS FOUND IN AURAL DISCHARGE, WITH SOME CLINICAL AND PATHOLOGICAL MANIFESTATIONS.*

BY GILBERT ROYCE, B.A., M.B., TORONTO.

OF late years considerable attention has been paid to the study of the bacteriology of aural discharge, with the view of determining what relation existed between the various micro-organisms and certain clinical and pathological phenomena. Although considerable progress has been made towards establishing a direct relation, much yet remains to be done, for there are some forms whose action cannot be determined, occurring, as they do, almost invariably, in association with other micro-organisms.

The admixture of germs that must necessarily occur in the discharge from the external auditory canal, has led many to view results from the examination with considerable doubt, and to look upon them as interesting from a scientific standpoint only: but, even should the mixture be especially luxuriant, a predominating form can be very frequently found, which, should the case go on to operation owing to mastoid complication, will be found in almost pure culture in the bone.

The longer the duration of the discharge the more mixed the infection is likely to be, so that the examination is far more valuable in recent cases. It is possible to reduce considerably the variety by first irrigating the canal with sterilized water and making the smear from the pus, as it pours from the opening in the tympanic membrane.

In the New York Eye and Ear Infirmary it has been the rule for some years past to make a microscopical examination of the discharge from the auditory canal of all recent cases on admission to the institution. Should the cases go on to operation on account of mastoid complications, smears are also taken from the mastoid pus. In only a small percentage of cases does the report of the examination of the discharge from the canal differ from that of the mastoid pus. To be explicit, should the report of aural pus designate streptococcus with mixed germs, meaning streptococcus predominating, almost invariably the report of mastoid pus designates streptococcus. This is borne out by a series of over five hundred reports which the writer looked over, and by many smears which he had the opportunity of examining.

Although countless varieties of micro-organisms are present in

*Paper read before the Ophthalmological and Oto Laryngological Section, Academy of Medicine, March 24th, 1908.

aural discharge, it is the purpose of this paper to mention only a few of those, the clinical significance of which is established.

By far the most important germ is the streptococcus pyogenes, for this organism is found either alone or in association in almost all cases of a fulminant type. Cases showing this germ mixed with such germs as the pneumococcus, the staphylococcus, or the spirillum of Vincent, exhibit especial malignancy.

Streptococcus infections are usually characterized by rapidity of onset, high fever, acute pain, marked local inflammatory action, and often septic aspect in the subject. The discharge is thick and creamy even from the commencement and copious in amount. They seldom yield to abortive treatment, and either go on to operation or a chronic discharging ear results. The number of chronic discharging ears with a history of having commenced during childhood as the result of an attack of scarlet fever, shows the tenacity of this organism. It also shows its tendency to chronicity, a feature which is characteristic of it.

Its action on the mastoid is frequently evidenced by rapid and extensive bone involvement leading to various complications, such as epidural abscess, perisinus abscess, or sinus thrombosis.

Dench, some years ago, conducted a series of investigations regarding the efficacy of abortive treatment in various infections, and found that 86 per cent. of pure streptococcus cases came to operation; when mixed with other organisms, 90 per cent. These were all acute cases.

Another form of streptococcus which has only of late years attracted attention is the streptococcus mucosus capsulatis. Dixon, the pathologist of the New York Eye and Ear Infirmary, some two years ago drew the attention of the profession to the peculiar action of this organism, and the writer was able during his service at the above institution to observe a considerable number of cases in which this germ appeared to be the etiological factor.

As little can be found in any but the very recent text-books on bacteriology concerning this form, it may be of interest to describe it in some detail.

It is a micrococcus that appears singly, in pairs, and chains bearing a capsule including the single coccus, and stains with all the usual aniline dyes; best, however, with dilute Ziehl, and is positive to Gram's method. It is non-motile and does not form spores. It is aerobic, facultative anaerobic, does not grow well in all laboratory media. The media is not liquefied. It grows best in Loeffler's solidified blood serum, and appears between 8 and 12 hours at 37 degrees C., as a shiny, flat, transparent, viscid-looking growth.

Its cultivation is poor on other media. It is very pathogenic for rabbits. Inoculation in the peritoneal cavity causes death in twenty-four hours.

Its peculiarities from a clinical point of view may be gathered from the following observations:

Acute cases of purulent otitis media, where the streptococcus capsulatus predominates, generally do well provided an early and free incision of the drum is made. The same is true if complicated with mastoiditis, and early operation is resorted to, but every day after two weeks, provided the discharge continues unabated, is fraught with danger to the patient, no matter what the symptoms are, and in those cases existing six weeks or over, the germ still being present in the discharge, every case operated on has been found to have sustained remarkable bone destruction, and this too often in the face of the fact that the patient may present a normal pulse and temperature, be entirely free from pain and tenderness, and profess a feeling of well-being and improvement in hearing. The blood may or may not show high polymuclear percentage. In other words, given a case of acute purulent otitis media, complicated with mastoiditis, in which the germ is the streptococcus capsulatus, whether the acute symptoms subside or not, but the discharge and germ persist for from two to four weeks, the mastoid will generally be found soft enough to be removed with a spoon. This will certainly be true after six weeks, and in addition the dura may be found exposed over a considerable area.

The above is the outcome of observations extending over a large number of cases.

On account of this tendency to a latent process in neighboring structures, patients showing this variety of infection require careful watching after the cessation of the first symptoms.

It may be noted here, too, that this form has been found with sufficient frequency in diabetic mastoids to attract attention.

One of the most frequent forms found in aural discharge is the staphylococcus pyogenes.

It is not commonly found alone, being usually associated with other forms. Some observers claim that it only occurs as a secondary infection. However this may be, its association with such organisms as the streptococcus and pneumococcus seems to favor their action. Cases showing staphylococcus predominating in a mixed infection or alone, are generally mild in character and readily yield to ordinary measures of treatment.

This might be expected from a consideration of its characteristically local action in other parts of the body, no tendency to spread being shown; in this it differs markedly from the streptococcus.

In recent cases of staphylococcus infection the pus is often thin, mucoid and stringy in character, and should mastoiditis complicate necessitating operative measures, considerable bone involvement is rare.

As to the importance of the pneumococcus as an etiological factor in the production of middle-ear disease, with its complications, there is some diversity of opinion.

Recent investigations, however, seem to show that when it occurs in comparatively pure culture the cases are generally mild in character and do well under ordinary treatment, but when associated with the streptococcus unusual malignancy is exhibited.

Although many other organisms, more or less important in connection with middle-ear disease, could be mentioned, the rôle they play as causative factors is not clear, therefore reference to them has been purposely avoided.

Under the microscopes are three smears of stained pus taken from purulent mastoids. The first is the streptococcus pyogenes, the second the streptococcus mucosis capsulatis, showing the capsule very plainly, and the third the pneumococcus. Attention is called to the fact that the smears are almost pure cultures of these organisms, that were, no doubt, the cause of the disease in each case from which they were taken.

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MEDICINE DEMANDS A HIGHER PRELIMINARY EDUCATION.

BY JOHN HUNTER, M.B.

A CASUAL comparison of the conditions that existed, say half a century ago, and those of the present time, should convince the most sceptical amongst us that a very radical change, both in the degree and character of the preliminary education of medical students is absolutely imperative. Neither the literary nor scientific standard now required for matriculation in medicine meets the present conditions. Neither is in keeping with the advancement that has taken place in medical science; and both alike fail to prepare the medical student for the work that confronts him in his course through college, and afterwards, in practice. The very defective character of his preliminary literary and scientific training is a heavy handicap in the race.

The want of a broader, deeper knowledge of languages—classic and modern—militates against his comprehension of the meaning and significance of a multitude of technical terms. His ignorance of the elementary principles and facts pertaining to such subjects as physics, chemistry and biology, prohibits his understanding the very rudiments, in biologic, or physiologic chemistry, physiology, bacteriology or histology.

The matriculation examination, of a few decades ago, provided a far more adequate preparation for the medical course as taught then, than the present standard does for the requirements of to-day. The old standard called for some knowledge of latin and physics, in addition to a fair education in English. The medical course consisted of lectures in anatomy, physiology, chemistry, materia medica, medicine, surgery and obstetrics. The student dissected half a subject; attended six obstetric cases, and made a few chemical tests. He went to the hospital clinics when he felt so inclined. The professors, or lecturers, were men who had acquired some eminence as general practitioners. In their lectures they confined themselves more particularly to the practical aspects of their subjects. The scientific, and laboratory features were left in abeyance. Whatever information—for by no stretch of imagination could it be called knowledge—the student acquired about the fundamental subjects, that is—histology, embryology, pathology, etc.—he obtained from text books. The examinations were all written ones. Any student, with a little industry, in three sessions of six months each, could acquire easily, enough information—not knowledge—on the subjects, as taught then, to pass the Medical Council, and also to graduate with honors at the University.

It is quite evident from this cursory glance that the preliminary education the student received forty or fifty years ago made a fairly good foundation for the subsequent medical course of that age. There was another very important factor in the student's favor at that period. He was almost invariably an ex-public school teacher of three or four years' standing; for teaching was about the only vocation at which he could earn the necessary funds for his subsequent medical course. The experience he acquired in imparting knowledge to others became very helpful to him in his technical education. He began his medical course with a far more practical and resourceful mental equipment than the modern student has, who matriculates directly from the collegiate institute, although the standard of the matriculation examination has been raised somewhat.

The fact that many of the graduates in medicine in the sixties and seventies of the past century became successful practitioners, is used, by a certain type of men, as an argument against making any radical change in the present standard of matriculation. This argument can only be used by those who utterly fail to recognize the great changes that have taken place in medical science within the past half century. The foundation of a medical education to meet modern exigencies must consist—not of a little information only—but of a broad, deep knowledge of such subjects as physics, inorganic chemistry, botany, etc., for only on such a foundation can a stately super-structure, composed of the higher subjects, as biologie, and physiologie chemistry, physiology, embryology, histology, bacteriology, etc., be reared. The student in acquiring his elementary knowledge of chemistry, physics and botany, becomes very familiar with the use of the microscope, an adept in staining specimens, and in mounting section—arts that will prove of almost inestimable value to him in his course. The student who is forced to acquire this elementary knowledge during the regular medical course, in which he has to take up all the other subjects—anatomy, obstetrics, surgery, medicine—will find the time altogether too short. He may, if very diligent, and by means of "quizz compends," acquire enough information to pass his examinations for a license and degree, but he soon realizes that he has only a very imperfect knowledge of any of the subjects. A few may be fortunate enough to supplement their knowledge by a post-graduate course, but the mass have to enter upon practice very inadequately equipped. Modern medicine demands of the recent graduate, that he be qualified to make, e.g., an examination of the blood—to prepare stains for detecting micro-organisms—to make quantitative tests of the products of secretion and excretion—to trace the process of digestion, etc. It is not implied that he pose as an expert in all these branches, but that he should know his work sufficiently

well to realize the importance of such knowledge, to get the inspiration it carries with it, and when thrown upon his own resources to make use of it. Perhaps a recital of the following incidents will help to make the meaning of what has just been stated more emphatic. At the recent meeting of the Ontario Medical Association in Hamilton, two papers were read—one, on the treatment of appendicitis, the other on a case of diabetes. Everyone in the audience took a deep interest in the former, because all understood the subject fairly well. Now, the latter paper was a master piece of work in biologic chemistry. By means of elaborate tables, it was shown how the amount of sugar and other products were increased or diminished by the ingestion of certain foods and drugs; but the paper might about as well have been written in Hebrew, as it was beyond the comprehension of the ordinary medical audience.

Any medical man who realizes present conditions, and who takes an interest in the welfare and progress of his profession, must often ask himself: "How can we best meet modern requirements in medicine?"

Two propositions offer themselves: (I.) Make a radical change in the preliminary education. (II.) Lengthen out the medical course. Many valid reasons can be advanced in favor of the former:

(I.) There are abundant facilities in our collegiate institutes, colleges and universities, for students to acquire just the preliminary training needed for a medical course. It can be pretty confidently predicted that before very long the public will become seized with the conviction, that in the interests of the progress and prosperity of the state, free text-books and free tuition should be provided from kindergarten through university. When this great boon to secondary, or academic education comes in force, the question of expense will be largely solved.

(II.) Any student who acquires a liberal education in English subjects—English literature, history, composition, mathematics—in Latin, French and German, and a two-years course in physics, chemistry, biology, botany, etc., is the only one really qualified to prosecute intelligently, the study of the higher branches in the regular medical course.

(III.) This training would not only prove of inestimable value to the student in his college career, but it would very materially help him in his professional standing after graduation. Medical men are meeting every year a larger number of university graduates in the homes. If the young physician is lacking in literary refinement, he cannot hope to make as favorable an impression as he would be able to do were he more liberally endowed with mental culture. The public do not now look upon the practice of medicine as being that of an occult science, or upon the physician as though he

possessed supernatural powers. The people know that medical knowledge is quite limited, so that about the best asset the physician has, is intellectual culture and refinement. When our young graduates begin to appreciate this fact we will hear very little complaint about the longer time, and greater expense involved in obtaining a thoroughly efficient preliminary, and technical training.

Now, as to the second proposition, *viz*: "Prolong the regular medical course." Two very serious and almost fatal objections can be raised to this.

(I.) As soon as the youth finds himself enrolled as a medical student, his curiosity is at once aroused. Such subjects as physics, inorganic chemistry, botany, are altogether too stale. He must see the X-ray machine, the dissecting room, and the major operations at the hospital. The fascinations in the practical work are so strong that it is almost impossible to get him to give the necessary attention to the preliminary subjects.

(II.) The most fatal objection to this proposition is, that the student builds the whole superstructure of his technical knowledge on a narrow, defective foundation. With a meagre literary training, he never fully comprehends the significance of many of the technical terms, and without some knowledge of physical laws, such problems as the circulation of the blood, and the transfusion of gases, are about as great mysteries to the illiterate medical student as are the engine and telephone to the untutored Indian.

Lastly, there is the patriotic side. Can Canada afford to be behind the United States? At Harvard, Yale, Johns Hopkins—a degree in arts is demanded, and in nearly a hundred medical colleges the standard of matriculation has been raised so as to include, in addition to a four year's high school course, two years in chemistry, biology, physics, etc. If the twentieth century is to see Canada dazzle the world in growth of population, in progress and in prosperity, the medical profession cannot afford to stand still. We must see to it, that we have men in our Medical Council with a broad out-look and of a good courage; men who are prepared to demand of every student the preliminary education best suited for the requirements of the medical science of to-day. Our university faculty should recognize its obligations. No student should be allowed to graduate whose indolence, indifference, or ignorance may bring disgrace on an honorable calling.

Our Medical Associations, Academy of Medicine, and medical societies, should read the signs of the times, and discern the calls coming up from the public for leadership on all the great questions concerning public health.

A medical profession composed of cultured, scientific men could make itself felt as a great factor in national progress and prosperity.

8 O'Hara Avenue.

Selected Articles.

THE PROTEID IRON PREPARATIONS OF THE NATIONAL FORMULARY, OR THE N. F. PROPAGANDA, WITH SOME QUERIES AND CONCLUSIONS.

INTRODUCTION.

THIS is a very important editorial. It is the most important editorial that I have written in several months. It deals with fundamental principles. It is going to present certain questions. And unless these questions are answered satisfactorily, our leaders in pharmacy, aided and abetted by some temporarily misguided physicians, will stand convicted before the world as engaged in a nasty business, injurious alike to pharmacy and medicine and criminally wrong as far as our patients are concerned.

I am entirely willing to be judged by this editorial as to my knowledge of the situation and as to my ability to reason fairly, logically and unanswerably. I am either right or wrong. If I am shown to be wrong, then I am unworthy to be a leader in medicine or in medico-pharmaceutical journalism, and the professors of pharmacy and therapeutics and the pharmacists in general who are paid subscribers to the *Critic and Guide* should show their displeasure by discontinuing their subscriptions. If, however, I am right, absolutely right, then this editorial should and will mark an epoch in American pharmacy and medicine (or rather medicinal therapeutics).

I have an unshakable belief in the invincible power of truth. It may be temporarily overshadowed by falsehood, you may succeed in filling the people's eyes with dust for a time, but after all the immortal saying of the immortal Lincoln about fooling the people remains an eternal verity.

* * *

When we have the temerity to state that some of the pharmacopœial and most of the National Formulary preparations intended as *substitutes* for well-known standard remedies are not "just as good" as the originals, that in fact some of these imitations are nasty, ill-tasting and ill-smelling concoctions (and that it is, therefore, wicked to mislead the physician and the pharmacist—the former to prescribe and the latter to dispense these substitutes), we are accused by some narrow-minded druggists, and some mis-

guided or ignorant doctors, of bias. To assure our accusers that we are as free from bias as any living human can be, and that our only misfortune is that we have a penchant for telling the truth, regardless of consequences, would be a waste of time. Let us, therefore, see what pharmacists themselves—and real pharmacists with laboratory facilities—have to say about some of the National Formulary preparations.

Prof. W. H. Harrison, of the North-western University School of Pharmacy, Chicago, read a paper before the Chicago Branch of the American Pharmaceutical Association entitled "Notes on Proteid Iron Solutions." The paper appears in the *American Journal of Pharmacy* for April, and we advise every honest physician and pharmacist to read it there in its entirety. An abstract of it also appears in the A. Ph. A. Bulletin for May. Dr. Harrison considers the three proteid iron preparations of the National Formulary: Liquor Ferri Peptonati, Liquor Ferri Peptonati cum Mangano, and Liquor Ferri Albuminati. Of the first Dr. Harrison has the following to say:

LIQUOR FERRI PEPTONATI.

"The present National Formulary formula yields a product which is a thick red-brown liquid, with a very *disagreeable glucy** odor. It is clear in neither reflected nor transmitted light, and of such a colloidal nature as to render filtration impossible even under greatly increased pressure. The taste is at first pleasant, followed by a strongly *alkaline* and *ferruginous* after-taste, which persists."

He then proceeds to show the reasons why a good preparation is impossible. The chief trouble lies in the peptone, of which it is impossible to obtain in the open market satisfactory or uniform specimens. Whether obtained from meat or fish albumen they "are prone to *rapid putrefaction* and yield iron combinations of most *offensive* odors."

Of Liquor Ferri Peptonati cum Mangano, which is openly and frankly intended as a substitute for Pepto-Mangan Gude, and on which substitute an immense amount of time and labor has been expended, the author has the following to say:

LIQUOR FERRI PEPTONATI CUM MANGANO.

"When made according to the present formula, with the materials obtainable on the market, the National Formulary preparation may be described thus:

"A dark brown *sluggish* liquid, with a most *offensive* odor, not unlike a mixture of *ammonia* and *putrefied beef extract*. Taste *alkaline*, *saline* and *nauseating*. It deposits after a time a *dirty white sediment*, which soon covers the bottom of the vessel.

"The finished product contains about .15 per cent. iron, .145

*Italics ours thruout.

per cent. or less manganese, and .234 per cent. ammonium hydroxide, the latter serving the *sole purpose* of developing more *offensive* odors.

"I have prepared four samples, in each case using different samples of peptonized iron, the finished products being almost identical.

"The trouble with this preparation lies principally with the peptonized iron and ammonium hydroxide, although there is room for improvement elsewhere.

"Of six samples of peptonized iron examined, the products of the principal manufacturers of pharmaceutical chemicals, *all* showed that *putrefaction* was in progress.* Of seven examined for iron content, only one showed over 5 per cent. Fe O (3.5 per cent. Fe), and this one sample has not yet been on the market under the name of peptonized iron or iron peptonate.

"At the time this work was started, but two samples of iron peptonate and none of the soluble manganese citrate were obtainable on the Chicago market.

"After some time I succeeded in collecting some direct from the manufacturers, seven samples of peptonized iron and two of soluble manganese citrate.

"These two samples of soluble manganese citrate, although bearing the same title, are *entirely different substances*.

"(1) A light red-brown powder with a strong odor of acetamide and ammonia. It is a manganese-ammonium citrate containing about 18 per cent. manganese. Incompletely soluble in water, but solution is rendered clear by standing for some time with a slight excess of ammonia.

"(2) Pearl-colored scales (evidently made after the formula of F. B. Power, Proceedings A. Ph. A., 1902, 937). Contains 13.5 per cent. manganese. It is a manganese sodium citrate, freely water-soluble."

"In view of the above facts, it seems that a satisfactory preparation according to the present N. F. formula is *impossible*, although with a good sample of peptonized iron it could yield a *passable* one."

Now, gentlemen of the medical and pharmaceutical professions, please read the above carefully, very carefully. Here we have a preparation of great, thoroughly established therapeutic value. That it is of great, thoroughly established therapeutic value is seen from the fact that it is prescribed by physicians universally throughout the country. That it is prescribed universally is seen

*Dr. Harrison is not alone in his opinion. All pharmacists who investigated the matter think the same. Mr. M. I. Wilbert, one of our foremost pharmacists, and a member of the Council of Pharmacy and Chemistry of the American Medical Association, says: "This formula [for *Liquor Ferri Peptonaticum manganis*] directs that commercial ferric peptonate be used. This substance at best is *variable*, is *unstable*, and, a *usually* met with, is *decomposed* and *unfit* for use. Commercial manganese peptonate, suggested in the alternative formula, is even more unsatisfactory than the ferric peptonate." (Amer. Jour. of Pharmacy, May, 1907, p. 211.)

from the fact that every manufacturer, big or little, and every would-be pharmaceutical chemist is racking his brains and spending his time and labor in his endeavor to prepare a successful substitute for Dr. Gude's pepto-mangan. And what is the result? What have we got? After hundreds and hundreds of attempts, after many years of labor, the leaders of pharmacy give us in the *third* edition of their book as a substitute for a well-known ferruginous tonic a formula, which yields in the hands of the *best* pharmacists a preparation of "a most *offensive* odor, *not unlike a mixture of ammonia and putrefied beef extract*. Taste *alkaline, saline, and nauseating*, and depositing after a time a *dirty white sediment!*"

Is this the aim of real professional pharmacy?

And I appeal to you all to answer this question: If you had a boy or girl, wife or mother who was very anemic and was in need of a mild, assimilable, non-irritating ferruginous tonic, would you give the original pleasant-to-eye, smell and taste—and stable pepto-mangan, or would you give the National Formulary Liquor Ferri Peptonati cum Mangano, which is physically, pharmaceutically and therapeutically *rotten* (there is no other term possible), which, according to the testimony of pharmacists themselves, has a *most* offensive odor, alkaline, saline and nauseating taste, and becomes very quickly decomposed? Would you run the risk of ruining their stomach and making them still sicker, because the imitation product may perhaps cost ten cents cheaper? And if you would not, if in your own family you would use the genuine product, why should you treat the outside public so badly?

Dr. Harrison claims that after numerous trials he has succeeded in preparing a satisfactory solution of iron peptonate with manganese. He gives an exceedingly elaborate formula and process. Assuming this to be the case, does anyone believe that one druggist in a thousand would go to all these pains to select materials of the highest quality? And does anyone believe that one druggist in a thousand would succeed in making a satisfactory preparation by following Dr. Harrison's elaborate directions, which it took him months to perfect? And what is it all for? And this leads us to the important question:

WHAT IS IT ALL FOR?

Who inoculated us with this crazy substitution-mania? What obsession has taken possession of us, that no sooner has a preparation become popular, no sooner has a real demand been created for it, than pharmaceutical professors and sub-professors, their assistants and sub-assistants, our manufacturers and their employees, anxious for a raise, and, what is worse, our National Formula makers, begin to spend time, labor and material, in order to prepare a more or less satisfactory (?) *substitute!* As a result

of this we get a hundred different imitations, all varying in color, odor, taste, chemical composition and therapeutic action, and many of them positively rank, irritating and injurious. And this is called the elevation of pharmacy and therapeutics! It is not thus in Europe. We do not hear of the English, German, French or Italian professors and pharmacopeia makers spending their time and labor in the attempted manufacture of imitations of well-known products. They spend their time and labor in *original research and investigation!*

The imitations, we said, all differ widely in character, and not one of them is as good as the original. The reasons are easy to understand. The manufacturer of one or only a few specialties devotes his entire time, energy and capital to those specialties. He makes numerous experiments; he uses materials of the highest obtainable quality; he invents or instals special machinery, if necessary. All these things are entirely out of the question with the retail druggist, and even with the big general pharmaceutical manufacturer; for, making several hundred to several thousand different preparations, it is impossible for him—it *does not pay him*—to devote too much time, labor and expense to an imitation of somebody else's specialty—especially as he has no reputation to gain or lose on it. Yes, the reasons are perfectly plain, why the imitations are never as good as the really worthy original additions to our therapeutic armamentarium. But while I knew a priori that this was so, I wanted to convince myself by concrete examples, by incontrovertible facts. I secured samples of practically *every* preparation which our noble pharmaceutical leaders have introduced into our Pharmacopeia and National Formulary as substitutes for well-known proprietary products. I secured samples of the "official imitations" of arsenauro, antiphlogistine, aristol, lysol, pepto-mangan, Gray's glycerine tonic, Gardner's hydriodic acid, Fairchild's essence of pepsin, Carlsbad salts, glyco-thymoline, listerine, even of such a simple thing as resinol, and *not in one instance* was the imitation equal to the original in purity, taste, homogeneity, stability, etc. Some of the preparations were absolutely rank, disgusting, and I could but feel contempt, mixed with indignation, against certain high moguls of pharmacy, who mislead the poor retail druggist and the unsophisticated physician into the belief that their careless, imperfect, theoretical, extemporaneous formulæ will yield products "just as good" as the standard products, which are the result, perhaps, of many years of chemical or pharmaceutical research, and which are prepared in specially adapted laboratories with the utmost care.

We will now pursue another line of thought. Let us assume for a moment that after the expenditure of a lot of time and labor somebody has succeeded in preparing an imitation of some well-established proprietary, which is *absolutely* "just as good"—abso-

lutely the same—pharmaceutically, chemically and therapeutically. Let us assume it. What has been accomplished? What has been added to pharmacy and chemistry? Nothing! Not an iota. Merely a product that has already been in existence and in use, has been duplicated by somebody else. But here somebody will be sure to interject: Why, the product has been cheapened. A product that can be manufactured by everybody is generally cheaper than a monopoly product. But to whom is the product cheaper? To the public? Any such assertion would be emphatically untrue. Just prescribe 12 ozs. or a pint of the imitations, let us say, of *Liq. ferri peptonati cum mangano* or *Elix. gentian. glycerinat.* and see how much a druggist will charge. As a matter of fact, I have been told and know personally of instances where my good friends, the druggists, make it a rule to charge *more* for the N. F. preparations than for the original products. Incredible? Just try it yourself. Do you want additional testimony from an unimpeachable source? Take the *American Journal of Pharmacy*, for May, 1907, and open it to page 236. On that page you will read the following:

“Professor Remington, in the course of his remarks, strongly deprecated the reported tendency of pharmacists to *charge more* for U. S. and N. F. preparations than for corresponding proprietary preparations, and expressed the belief that practices of this kind would surely do much to discredit the propaganda and do an infinite amount of harm.”

It is thus *seen*—and seen in a manner which cannot be gainsaid—that the public is not at all benefited by this U. S. P.-N. F. propaganda. Who then is benefited? The druggists? Yes, that I admit. The druggist is to a certain extent benefited by this propaganda. And nobody begrudges it to him. Eking out, as he does, a very poor living, after working longer hours than any other tradesman or professional man, nobody, I am sure, will grudge the druggist a few extra cents profit (*provided* the imitation products are really in every respect as good as the original ones). But, this being so, that is, the manufacture of imitation products *not* tending to the elevation of pharmacy and chemistry, and *not* being of the slightest benefit to the public, let us say so! Let us have a clear understanding as to what all this propaganda is about. Let us stop talking about the elevation of professional pharmacy, let us stop throwing dust into the eyes of the unsophisticated physician, and let us acknowledge openly and honestly that the entire N. F. propaganda is a movement instituted for the purpose of affording the druggist a larger profit on physicians' prescriptions and—if it must be said—of making substitution respectable, of giving it, so to say, an official status. Is this putting it too strong? But it is the truth, and the language of truth, said the Romans, is simple; simple, plain and direct.

A WARNING.

And here I wish to utter a word of friendly warning to the pharmacists of this country, which warning I trust will be heeded by the readers of the *Critic and Guide*. Suppose the N. F. propaganda is successful and the doctors begin to prescribe N. F. preparations instead of standard long-established products. Then the druggist must be *sure*—and this is my warning—that the preparations he dispenses are really of high merit physically (taste, odor, etc.), pharmaceutically and therapeutically. Otherwise, he will only hurt himself, the thing will act as a boomerang; the doctor's confidence in the retail druggist's ability will be shaken still further, and he will be still further strengthened in his belief that the safest thing is to prescribe brand preparations of known composition—or he will be driven into self-dispensing. Here are two actual experiences—two out of many that I could relate. A physician was in the habit of prescribing large quantities of Hayden's Viburnum Comp. The druggist to whom most of the prescriptions used to go thought it wise to do some missionary work with the doctor, showed him circulars about nostrums, etc., and urged him to prescribe the N. F. substitute for H. V. C., which, he claimed, was superior. The doctor finally, half-persuaded, wrote a prescription for Viburnum compound N. F. The druggist prepared it extemporaneously and dispensed it. The woman complained to the doctor that the medicine did not taste like the other times, made her sick at the stomach and didn't do her any good. The doctor, as he told me, then sent the N. F. to —, continued to prescribe as formerly, and the missionary druggist is now getting fewer prescriptions from him than formerly. The second case is one in which a druggist dispensed a muddy, ill-smelling, strongly alkaline mixture instead of pepto-mangan, which the doctor had prescribed, and as a result lost almost his entire prescription trade, for the doctor was one of those who looked at the substitution business very seriously and took pains to tell the members of his medical society that the druggist O. was a substitutor.

Yes, make sure, when you do create a demand for U. S. P. and N. F. preparations, that you are able to supply the demand. For it is a well-known fact that *not* 5 per cent. of the druggists in the country are capable of preparing even the half-way complex preparations of the U. S. P. and N. F. (such as the organic iron preparations, effervescent salts, etc.).

We are not alone in our opinion that the N. F. propaganda is not the best thing in the world. Some prominent pharmacists think the same way. Take the *American Journal of Pharmacy* (June, 1907). On page 296 you will find a report of a paper entitled “‘Practical Results with N. F. Preparations,’” read before

the Philadelphia College of Pharmacy. In discussing that paper, a prominent pharmacist, Mr. D. J. Thomas, "was inclined to question the advisability of pursuing this line of work at the present time, thinking that *the rank and file of pharmacists were not prepared to meet the demand* for U. S. P. and N. F. preparations. He recounted some experiences that had come to his attention that appeared to indicate that pharmacists in his locality, like pharmacists in other sections, had been remiss in their duty to themselves and their customers, and had not kept themselves posted on the progress of pharmacy along the more practical lines. He also called attention to several formulas that *when followed exactly did not give satisfactory preparations*. Among these he enumerated the glycerinated elixir of gentian and the cataplasm of kaolin."

This editorial could be drawn out so as to occupy an entire issue—for numerous facts and illustrations could be offered as proofs in support of our position—but we believe we have said enough to show the tenability, the validity of our reasons, the impregnability of our position, to any fair-minded person, to any person who really wants to know the truth.

And now for a brief resumé of the conclusions based upon the facts and arguments presented in our editorial. The conclusions are as follows:

1. The products introduced into the Pharmacopeia and National Formulary as substitutes for other well-established products are inferior, in practically every instance, to the originals, while some of the formulas yield nasty, irritating, nauseating and, therefore, therapeutically worthless products.

2. To urge the physician to prescribe these imitations *in lieu* of the original products is, therefore, dishonest. The physician *is not in any way* benefited, while the patient is distinctly injured.

3. This so-called National Formulary Propaganda has nothing to do with ethics. Instead of elevating, it tends, as we have shown, to degrade both pharmacy and medicine. It is purely a money-making proposition.

4. The public is not in any way benefited by this propaganda, for the patient has to pay just as much (and often more) for the inferior substitute as for the *superior* original.

5. The deduction which logically and inevitably follows from the above conclusions is this: If you know the composition of a product and that product has given you satisfactory results in your practice, stick to that product; prescribe it and see that you get it; and do not allow yourself by specious reasoning and false claims to be persuaded to use an imitation or a substitute, *be that imitation or substitute official or non-official.*—*Critic and Guide.*

Dixi.

Proceedings of Societies.

THE MEETING OF THE ONTARIO MEDICAL COUNCIL.

THE regular summer session of the Ontario Medical Council opened on Monday, July 6th, in its new building, on Queen Street Avenue, Toronto. Monday was devoted to the usual committee meetings, and the regular session opened on Tuesday, the 7th, at 10 a.m. The members were practically all on hand and devoted their time for six full days to the business of the College. The new building has been almost entirely renovated and looked attractive and comfortable. The necessary alterations to the interior of the building have not as yet been undertaken until the Building Committee decide just what is required and where the examination hall will be built, whether on the Murray Street frontage, entirely separate from the Main Building, or whether a wing will be built. We think that Dr. A. J. Johnson and his committee who purchased the Council's new home are to be congratulated upon their choice.

At the last intermediate examination for medical students there were between 60 and 65 per cent. failures. A strong feeling has arisen that many of these men, after spending four years in study, were unfairly ploughed. To the unfortunate ones whose financial resources are not large this ploughing almost at the last moment is a serious thing, and, therefore, the Ontario Medical Council have decided to investigate the whole matter. Considering that the majority of those who failed had already passed the primary examination with credit, the Ontario Medical Council thinks that there must be something radically wrong. Either the instruction given was not sufficient or thorough, the examination papers too difficult, or else the examiners have not been judicious in their decision. Dr. W. Britton, in discussing the matter at the opening session of the Council, said that it was impossible not to arrive at the conclusion that there was something wrong. So far as he knew, at any rate so far as the University of Toronto was concerned, there were plenty of men of ability to give the necessary instruction. He did not wish to reflect on the examiners, but at the same time the Council not only had to protect the public but the students, and a full inquiry should be held.

Dr. Ryan, Kingston; Dr. Britton, Dr. Spankie, Dr. Gibson, Dr. Robertson, Dr. Moorhouse and Dr. Temple were appointed to form a Committee of Investigation.

On the motion of Sir James Grant, the following resolution was passed: "That the members of the Council of Physicians and Surgeons of Ontario have observed with pleasure the judicious action of the Government of Canada in passing a measure for the thorough scientific expert examination of meat and food products generally, in order to serve, as far as possible, the best interests of our people."

In the course of his address, Sir James reminded his hearers that forty-two years had elapsed since the Ontario Medical Council was first organized. During the early stages of its organization those responsible for it labored under very considerable difficulty in the formation or for the adoption of measures for the guidance and direction of the people of Ontario. One subject which came before them most directly was hygiene and sanitary science, and after considerable difficulty measures were passed for the education of the rising generation in those important matters in educational institutions throughout the Province. A great change had, he was happy to say, come over the public mind since that day, and in bringing this about, and the improvement of the standing of the medical profession, the medical men of Toronto had accomplished a large part.

Referring to the food inspection bill, Sir James said that in order to carry out its intention the Dominion Government had sent a number of intelligent scientific members of the veterinary surgeon class to Chicago, where they were instructed at the meat-packing establishments in the examination of food and food products. Those gentlemen had afterwards been distributed throughout the Dominion, and were engaged examining carefully not only the meat products, but the animals before they were killed, to see whether they were fit for slaughter and human consumption. That was a matter of very great importance, and it was well for the people of Canada to know exactly what had been accomplished.

During the present session of the House of Commons Dr. Black of Nova Scotia, a very able and eminent man, had addressed the Government on the desirability of the formation of a bureau of public health in order that the various subjects pertaining to public health, scattered now throughout different departments, might be collated under one head. That was recommended in order that work in connection with public health might be carried on more perfectly and economically. Proceeding, Sir James pointed out that suspected food products were sent to the Agricultural Farm, where they were pathologically and microscopically examined by a competent staff to see whether the products were affected by tuberculosis or not. At the present time there were not less than 8,000 deaths a year from tuberculosis. Putting the value of each life at \$1,000, that meant \$8,000,000 lost to the country. The Medical

Council of Ontario was vitally interested in the welfare of the country. Its members had much to do with the education of the rising generation of medical men. They had to see that the young medical men were thoroughly competent not only in pathological work, but also in minute microscopical work, in order to give an adequate return to those who employed them.

It was only by accuracy, combination of action and strenuous effort on behalf of the people that they could ever hope to stay the progress of tuberculosis. He hoped that the Government of Ontario, which occupied such an important position, would do something towards stopping the still further progress of the disease by having the schools thoroughly inspected and so doing away with parents' fear that their child might be sitting next one affected by the disease. Was it not high time, he asked, that some of the public money of Canada should be expended in this work?

The resolution was unanimously adopted.

Dr. W. Britton presented the report of the special committee appointed last year to consider the fifth year curriculum. In view of the fact that the various teaching institutions had not yet had time to complete the details of their fifth year curriculum, the committee recommended that no action should be taken in regard to specifying additional work. The names of 189 physicians have been struck off the register for non-payment of the annual fee of \$2. In many cases these are men who have left the Province, and all can be reinstated on the payment of arrears.

A committee, consisting of Drs. Britton, Moorhouse, Bryon, Klotz, Gibson, Adams and Griffin, was appointed to consider and report at the present session on the advisability of securing reciprocity between the College of Physicians and Surgeons of Ontario and the General Medical Council of Great Britain, as provided for in the Medical Act of Great Britain.

It was decided that Drs. Bascom, Lane, Vardon, King and McArthur be a committee to rearrange the boundaries of the electoral divisions, and that the Provincial Legislature be asked for the legislation necessary to make such changes legal.

Drs. Glasgow, Hardy and Temple were appointed the Executive Committee for the ensuing year.

SESSION OF WEDNESDAY, JULY 8TH.

"The attention of this Council having recently been called to the prevalence of crime against the unborn, that when the detective becomes aware of such a case he be instructed to lay the matter before the Prosecutions Committee, who will, after careful inquiry, pass the evidence, when deemed advisable, on to the Discipline Committee for action."

The above motion, introduced by Dr. F. N. G. Starr, and sec-

ended by Dr. Arthur Jukes Johnson, was carried by the Ontario Medical Council on Wednesday afternoon.

It was a combination of two motions, of which Dr. Starr had given notice at the morning session. The matter arose out of the report of the Council's prosecutor, Mr. Charles Rose, in which, after detailing the disposal of forty-five informations during the year, in which twenty-eight convictions were registered, a clause mentioned the cases of Dr. D. W. Shier and Dr. E. M. Cook, of Toronto, saying that it was for the Council to say what action should be taken.

A hot discussion occupied the rest of the morning session. Dr. Starr set the ball rolling by giving notice of motion that the registrar confer with the detective in investigating charges against members of the Medical Council, and of another motion that the Council proceed to the investigation of the records of members of the Council whose names had been mentioned in connection with crimes against the unborn.

Dr. McColl of Belleville thought the Discipline Committee should pay particular attention to the cases of Dr. Cook and Dr. Shier. In the latter case, he said, the fact of Dr. Shier's having charged a fee of \$25 for directing the girl to go to a certain house, although it was stated that he had made no examination of her nor given her any treatment, seemed on the face of it, if there was nothing else shady about it, to be a clear case of fraud.

Dr. Starr thought it most important for the Council to take action, not only in the case of these men, but some others, as the Discipline Committee might. Four medical men must make a charge in order to bring it before the Council.

But the Council had a great deal of power, "and we have," he said, "to clean our skirts. This Council is accused of all sorts of things, and we must be up and do our duty—a most unpleasant duty—but it must be done. An editorial in one of the city papers calls directly for an explanation."

Then the Council was fairly agog, some members on the line of an inquiry, others resenting the charges made against the Council, and even denying that there was much cause for criticism of the medical profession.

A number of the physicians present took part in the discussion, some claiming that the Council had no power of initiative in criminal prosecutions and could not act till a man had been convicted of crime. They dare not attack a man's professional character without having a clear case. The papers would say they were a lot of fools if they did.

"This is in the same line with previous editorials in the same paper," said Dr. Ryan, referring to one in Tuesday morning's *Globe*; "it is unreliable. This same paper came out and attacked

the Council for endeavoring to make a high standard of education, and then a few months afterwards this same paper attacked the Council for not making a higher standard. When we took action against a man it found fault with us, and now when we have not a good case it attacks us for not prosecuting. It is just the old case of 'You will or you won't: you'll be damned if you do, and you'll be damned if you don't.' They are accusing us of attempting to mislead the public, or hopelessly muddling matters up. We know the law and we are trying to carry it out. We are not rushing in, like fools, but rather, as angels, are going in when we are sure we are right. I think the Council should take some action to let the public know this."

Dr. Britton was surprised, he said, to find that editorial in his paper this morning. "I think I am a pretty good Grit," said he, "but I don't subscribe to every editorial in *The Globe*. I have some opinions of my own." He asked who sought to have the Council empowered to strike off the name of any doctor guilty of such practices—*The Globe*, the people or the Council? It was the Council who had applied to the Legislature for that power. From that hour to the present they had done the best they could. *The Globe* had all along taken this ground: that there were quite a large number of medical men throughout the Province who were reported to be abortionists. He did not think there were many; he could count up on his fingers, he thought, a few that he would suspect. But had *The Globe* ever heard of a man being impeached in Parliament or tried in any court, from the lowest to the highest, on reputation? No one in the Council or in the Province abhorred or deplored more than he that there were men who had that reputation. But he took issue with *The Globe* when it said the number of such was very large.

Dr. Britton said the detectives of this county had the names of certain men whom they are watching, and the Council were only waiting for them to secure that information, and then they would proceed without any hesitation.

"If the editor of *The Globe*," said he, "is posing as a Luther, going to reform the whole medical profession, let him do as Luther did, and nail his theses before the Church; let him come before this Council with his information and we will proceed."

A Voice: "He is afraid to do what he wants us to do."

"Exactly," replied the speaker. "I am only too anxious that we should purge our profession, a noble one as it is, of anything unjust and unholy."

"There is such a thing mentioned in the best book," continued Dr. Britton, "as straining at the gnat and swallowing the camel. There are very few newspapers that are not inserting, not for the hope of reward, but for reward, the most objectionable advertise-

ments, which simply are promotive of abortion." Here the speaker referred to certain pills, and asked, "What does that mean to a woman who wants relief, except that it is a suggestion to her to commit murder in its initial stages?"

"Let the newspapers be fair," he said; "let them do what is clean and decent themselves; let them give us credit for trying to do right. If they have evidence let the editors come like straightforward men and lay it before us, instead of saying, as they have said, that our retiring President, Dr. Spaukie, in his address was drawing a herring across the track."

"Why should we be so concerned about what the newspapers choose to write?" asked Dr. Arthur Jukes Johnson. "It is their business, their livelihood. Are newspapers as a general thing clean in their advertisements and editorials? (Cries of 'No.') Then why should we be so concerned? What is our position, what should we do, irrespective of the lash which the press seems disposed to ply on us?"

"The Crown," he continued, "has an immense volume of evidence, not against one man, but many medical men, for doing illegal actions. The Crown cannot prosecute except when the evidence is good; the authorities think it does more harm to the welfare of the people by exposing these matters than by waiting till the action can be carried to conviction. When a man is tried for a crime, and it is believed he has committed that crime, then if a conviction is registered against him the Council could remove his name from the register even if he were not punished by the courts. There are a large number of cases where the man is not convicted, but if they were brought here this Council could have reason to take their names off. The fact of a conviction being registered is not the only sufficient cause for the Council taking such action.

"The difficulty has been," said Coroner Johnson, "that we have not hitherto, perhaps, as a Council, taken action in all the cases on which we might have done so. There are cases talked of to-day of men said to be in the habit of performing such operations, and I think the Council must take some action. We might find that we were able to unearth a lot of evidence when we got in touch with the police that you have no idea of, which if it came before this Council could be taken hold of for drastic action.

"When a case of abortion is mentioned," said Dr. Johnson, "money flows into certain channels like water to everybody who can be approached. Witnesses are taken out of the country, so that the Crown, starting with a good case, may have only a few poor witnesses when it comes to the Assizes."

Dr. Moorhouse took strong exception to Dr. Ryan's statement that there were not many guilty of the practice referred to. "I

think," he said, "that there are more medical men engaged in this than we know of. These men will go on with this sort of thing after their names are taken off our register, and we can't prosecute them. We have never been given that power, and *The Globe* knows it. It is for some ulterior object, I believe, this has been done. I think it would be well for us to make our position known, without seeming to make too much effort to do so."

Dr. Ryan asked where the Council would be if it undertook cases and failed to get conviction. The men attacked would have a good case against the Council.

In answer to this argument, however, Dr. Starr read section 36 of the by-laws, which states that no action shall be brought against the Council for any action brought by it bona fide.

Dr. Henry, of Orangeville, who is one of the oldest practitioners in the Province, lamented the failure of prosecution against a druggist in his town, caught red-handed, although the matter was brought to the notice of the Attorney-General.

"The man that is guilty of that crime," said Dr. Henry, "is not fit to occupy the position of a practitioner in this Province. There is more of that conduct going on than you are aware of, and it is about time we should wipe it out. Toronto is about as bad a city as you can find."

"Oh, no," called out some in derision. "And Orangeville," said others.

"That's only a suburb," said another.

"There are just as few sinners in our profession as in any other," said Dr. Vardon, ex-Mayor of Galt. "Take the clerical profession, the legal, the druggists, or the publishers of our daily papers. If any member is convicted of crime we should take his name off. But for a mere matter of scandal, that some irresponsible person says Mr. So-and-so or Dr. So-and-so is guilty of some crime, that should not be regarded by us. No case is allowed to go to the special committee in Parliament without specific charges being made. Yet we find the Parliament both at Ottawa and elsewhere covering up charges against members because specific information is not laid. And this same paper that comes out against this Council, this same paper, and the clerical gentleman who is at the head of it, has stood shoulder to shoulder with those who were trying to hush up the scandals in the Yukon from being brought to light, that would render this Council black to look upon! (Laughter.) Any medical man," proceeded Dr. Vardon, "who is guilty of a crime—a heinous crime, I mean, not of debt—God knows, if all the editors of this country were put in jail who ought to be there for debt—" The rest of the sentence was lost in outbursts of laughter and cries of "Go on!"

Dr. Vardon went on: "Then we should take action," he said,

"but for this Council to institute a committee of inquiry would be absurd. We know that the press is bought up every day. They will deny it, and say 'Produce the evidence.' But we know it is a fact. We might not convict them before a court with the laws of evidence, but could before this Council.

"The clerical profession has a duty to perform. Let them teach their people a better Christianity, so they will do better than to tempt these poor physicians who live from hand to mouth. Who are the people that do this but those that sit under their preaching? The clergy are the moral teachers of the people, and we follow their guidance. The Rev. Mr. Macdonald, the editor of *The Globe*, was one of them before he took his present position, and there is no man in the country," declared Dr. Vardon, "who has prostituted his position more than he. He is a Presbyterian, I believe, and so am I, but God knows if he stays in the—" Here again laughter drowned the speaker's remarks.

"Let the ministers and the press of this land," he continued, "educate the people. Let them educate the children going to the schools, let lectures be given them in a way that will not be offensive to any, teaching them what they should do and how they should live in after life; then they will not tempt these poor medical men. You don't know what temptations they have placed before them. Perhaps if some of these holy editors were placed in that position they would fall, too. Some of them get nothing out of it either, or practically nothing."

Dr. Moorhouse remarked that no man was tempted as much to err as a doctor frequently was—not for money, but perhaps for old friendship's sake.

The discussion ended here for the morning by the motion being put and carried to refer the prosecutor's report to the Prosecution Committee.

In the afternoon it was decided to hold the next annual meeting on Tuesday, the 6th of July next.

Dr. Britton gave notice of motion for leave to introduce a by-law to provide for holding a special meeting of the Council the first Tuesday of November to receive the reports of special committees.

Dr. Griffin gave notice of motion for leave to introduce a by-law to levy an annual fee.

Dr. Starr moved to have the examiners meet after the examination to consider the marks given before they hand out the results. This was allowed to stand until after the special committee which is dealing with that matter has brought in a report.

In the evening the Council were by invitation of Dr. F. N. G. Starr the guests at a social reception in the Dean's residence at University College.

The Ontario Medical Council instructed its Discipline Com-

mittee to proceed at once to investigate the cases of Dr. D. Webster Shier and Dr. E. M. Cook, and that committee will report to the special session fixed for the 17th of November.

The Council also decided in the morning to continue the publication of the discussions in full in the annual "Announcement," as tending to keep debates relevant, and because most of the members thought the physicians in the electoral districts would want to see what their representatives said.

A Prosecutions Committee was appointed on motion of Dr. J. H. Cormack, St. Thomas, consisting of the members of the Council resident in Toronto, viz., Drs. Johnson, King, Britton, Hart, Hardy, Starr, Temple and Adams. The business of the latter committee is to act in an advisory capacity to the prosecutor.

The Discipline Committee appointed on motion of Dr. M. O. Klotz of Ottawa consists of Dr. Robertson, of Stratford, Dr. Lane, Mallorytown; Dr. Gibson, Sault Ste. Marie, and Dr. Henderson, Strathroy.

A special session of the Council was provided for in a by-law enacted on motion of Dr. Britton. It will be held beginning on the third Tuesday in November (the 17th). Dr. Britton gave as reasons for the calling of a special session the necessity of dealing with examinations, arranging districts, and dealing with cases of discipline. He referred to "the discussion of yesterday morning, in which certain practitioners were mentioned who are known to be doing wrong, and certain others that we suspect of doing wrong." "If we wait," said Dr. Britton, "until next year, it means that these men go unwhipped of justice for a whole year. Notwithstanding what I said yesterday about newspaper criticism, I fully believe that we should take prompt action along this line, and not allow any expense to stand in the way." The latter remark had reference to the statement made by Dr. J. S. Hart that it costs some \$2,000 to hold a session of the Council.

The Prosecution Committee in the afternoon presented its report through Dr. Arthur Jukes Johnson, seconded by Dr. Edmund E. King, in the case of the two physicians whose names were referred to it, viz., Dr. D. Webster Shier of the corner of Bloor and Markham streets, and Dr. E. M. Cook of 90 College street. The report stated that "after due deliberation we have arrived at the conclusion that it would be wise for the Council to instruct the Discipline Committee to proceed to the investigation of both cases."

In reply to a question by Dr. F. N. G. Starr, it was stated by Dr. Britton that when four medical practitioners present a complaint against a medical man it must always come before the Council, which instructs the Discipline Committee to deal with any case.

Dr. King, seconded by Dr. Johnson, moved that the case of Dr.

D. Webster Shier be referred to the Discipline Committee. The case of Dr. E. M. Cook was likewise referred in a separate motion. The report of the Discipline Committee will be presented at the special meeting in November.

The solicitor of the Council is to be asked for an opinion as to whether or not cases can be referred by the Executive Committee to the Discipline Committee in the interval between Council meetings. The motion was by Dr. Britton, seconded by Dr. Moorhouse of London.

The Council finds itself in an awkward position in the cases against Dr. Shier and Dr. Cook, from the fact that Mr. J. W. Curry, who when Crown Attorney was engaged by the Council, is at present counsel to defend both of the doctors. The Council has the power to select any attorney, but the general feeling was that when circumstances do not render it inadvisable or impossible prosecutions should be placed in the hands of the Crown Attorney.

A communication from the West Toronto Medical Association was presented by Dr. R. J. Gibson, Sault Ste. Marie, urging a much higher standard for matriculation in medicine, raising it either to a degree in arts, or to a standard sufficiently high "to demand that broad culture and mental discipline so essential to every medical student in the acquisition of his technical knowledge and to every physician in the efficient discharge of his duties." The letter was referred to the special committee on educational matters.

On motion of Dr. Moorhouse, seconded by Dr. Henderson, a by-law was enacted providing for the conducting of a fall examination in Toronto on the third Tuesday in September, 1908, and also that examinations be conducted in Toronto, Kingston and London on the third Tuesday in May, 1909.

The Council voted down a motion of Dr. McColl of Belleville to eliminate from the annual published proceedings the report of discussions. Dr. Hillier of Bowmanville said that "this Ontario Medical Council and the Dominion Parliament are the only bodies that have a Hansard."

Dr. Moorhouse of London, ascertaining from the Chairman of the Printing Committee, Dr. E. E. King, Toronto, that the printing of the discussions in full entails an expense of some \$250 more than the mere transactions, expressed the opinion that it was worth the extra cost because of the large constituencies of members, who would want to know what their representatives had been doing.

Dr. King thought the discussions should be published; it would put the men on record in black and white, and the discussions would tend to be more to the point. Dr. Vardon would like to see the expenses of Council curtailed, but still considered it better to see these discussions published; it would be worth the extra expense.

"It would be a great pity that Dr. Vardon's effort of yesterday

should not go down to posterity," remarked Dr. R. J. Gibson, of Sault Ste. Marie, who is Liberal candidate for West Algoma.

The business of the session was pleasingly interrupted by the presentation of an illuminated address to Dr. C. T. Campbell, M.C.P.S.O., of London, a former President of the Council, and for twenty-five years associated with it. The address was read by Dr. W. H. Moorhouse, who was President in 1906-'07, when Dr. Campbell resigned from the Council because of his appointment as Postoffice Inspector of West London district. It was signed also by Dr. R. A. Pyne, Registrar at that time. Dr. Hardy, Vice-President, who was in the chair at the time, made the presentation. Dr. Campbell, in reply, noted that there were only two members present who were in the Council when he had joined it, the Registrar, Dr. Bray, and Dr. Henderson.

Dr. J. S. Hart, Toronto, introduced a motion, seconded by Dr. H. Bascom, Uxbridge, favoring the addition to the curriculum, after the words "four months in therapeutics," the words "including electro-therapeutics, hydro-therapeutics, and massage." Dr. Ryan, Kingston, seconded by Dr. Temple, moved in amendment to refer the matter to the special committee on council examinations, being unwilling, he said, to have those subjects put on the curriculum without further investigation. The amendment carried.

A strong plea was put forth at the Saturday's session of the Ontario Medical Council on behalf of the principle of interprovincial reciprocity in medical registration by Dr. W. Spankie of Wolfe Island, ex-President, and a motion by him, seconded by Dr. S. C. Hillier, of Bowmanville, was adopted, referring the matter to the Special Committee on Education, which has already to consider the question of reciprocity with Great Britain.

The report of the Committee on Education, presented by Dr. R. J. Gibson, of Sault Ste. Marie, seconded by Dr. Moorhouse of London, recommended a large number of changes in the curriculum, considerably lessening the number of general text-books and of papers, and making other alterations of perhaps less general interest or importance.

The following changes were made in the Board of Examiners for the ensuing year: Dr. R. W. Schnarr, Berlin, medical jurisprudence and sanitary science, in place of Dr. D. J. Sinclair, Woodstock; Dr. W. I. Bradley, Ottawa, diseases of children and clinical, in place of Dr. J. Newell, Watford; Dr. W. S. Cody, Hamilton, homoeopathic examiner, in place of Dr. W. A. McFall, Toronto, and Dr. George F. Clark, Aylmer, assistant homoeopathic examiner, in place of Dr. R. W. Schnarr, Berlin.

The Finance Committee, reporting through Dr. E. E. King, Toronto, showed a balance on deposit to the credit of the College of

Physicians and Surgeons of Ontario of \$28,359.41 in the Sterling Bank, \$10,000 in the Imperial Bank, and \$10,000 in the Bank of Montreal.

It was urged by Dr. McArthur of London that the funds should not be invested in any other way than by being deposited in the chartered banks. This was in reference to a request from the Finance Committee for instructions as they felt that the large balance on hand on deposit drawing simple bank interest should be invested at a more remunerative rate. The general feeling appeared to be in favor of such investment as the committee suggested.

The sessional allowance of members was fixed at \$120, and the session was computed as six days. The committee recommended that Mr. Chas. Rose receive, as public prosecutor, the sum of \$1,200 per annum.

The assets total \$79,525.41, and liabilities \$12,500, leaving a balance in favor of the college of \$67,025.41. The report carried.

ABSTRACTS.

Congenital Pyloric Stenosis.—Sutherland's paper deals with the medical treatment of congenital pyloric stenosis by means of dieting and gastric lavage. The aim of such treatment is to remove any source of irritation in the stomach which may maintain pyloric spasm, and to keep the stomach free from any irritating food material, digested or undigested. It is not to be supposed that even in marked cases the pylorus never relaxes. The gravity of the affection lies in the fact that it does not do so enough to allow of the passage of food in sufficient quantity for the nutrition of the infant. The aim of the treatment is to restore the function of relaxation of the pylorus which has been in abeyance, owing to the more powerful action of the constrictor muscular fibres. Although the stomach is dilated and large, yet small feedings are called for in order to secure complete digestion. Two or three ounces are sufficient for a meal, and in bad cases one ounce may be advisable. The number of meals must be increased; a month old infant must be fed every two hours day and night, and in bad cases where only one ounce is given, every hour by day. Hunger usually awakens the child with great regularity. The proteids and fats are the parts of the food which are most difficult to digest. If good breast milk is available it is the best food, but the fats should not be more than three per cent. Ordinary modified cow's milk does not work well, as a rule, peptonized cow's milk without added cream being much better. Malt extract, raw meat juice, and grape juice may be given in addition. The

stomach should be washed out once a day for a prolonged period, and in bad cases it may be required twice a day. It is a simple process in infants, and leads to no discomfort. It should be done when the stomach is ordinarily empty—*i.e.*, two hours after a meal. The washing should show a small amount of soft flocculent material, tending to get less in amount with each washing. If much material is washed out, or undigested curds, it indicates that the food is not properly digested, and will maintain the pyloric spasm. The signs of progress are as follows: 1. The vomiting ceases. 2. The bowels act naturally. 3. The stomach peristalsis becomes less marked, and gradually passes off. 4. The discomfort, pain, apathy, and whining of the infant are removed. 5. The nutrition is improved. A common complication is diarrhea, due to the bowels having been out of use for some time. The best treatment is to reduce the amount of food by one-half. The use of antispasmodic drugs, such as opium and the bromides, has not proved of the slightest value. In marasmic infants whose tissues are dried up, the use of saline solutions, both subcutaneously and by rectum, has seemed beneficial.—*N. Y. Medical Journal*.

Tetanus Neonatorum.—In a second article (*Journal A.M.A.* December 22), reporting the results of their statistical study in addition to the one published in *The Journal A. M. A.*, July 29, 1905, page 314, J. M. Anders and A. C. Morgan, Philadelphia, call attention to the wide distribution of infantile tetanus, its special frequency among negroes noticed by southern physicians, and the terrible infectiousness of the disorder in local epidemics. They give the results of a wide personal correspondence with physicians in all parts of the country, and a number of interesting details. They say that in the light of our accurate scientific knowledge of this disease, the necessity of absolute asepsis in confinement cases, and especially in the care of the cord, should be insisted on. To this end the registration of midwives should be required by law. The medical colleges should give more attention to the subject, and instructions as to the simple methods of prevention should be sent out by the boards of health, charitable societies, etc.

The Canadian Journal of Medicine and Surgery

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Editorials.

WESTERN MEDICINE IN KOREA.

WESTERN medicine advances with rapid footsteps in Korea, so fast, indeed, that, at the present time, one finds it hard in Korea to travel far away from the vicinity of some practitioner of western medicine, either foreign or Japanese.

Such is the statement we notice in *The Seoul Press*, June 5th, 1908. After the close of the Russo-Japanese war Prince Ito, the

Japanese Resident-General, introduced reforms in the medical institutions of Korea. He united three Korean medical institutions—a school of medicine, a vaccine manufacturing establishment and a hospital—into one, and placed it under the management of Baron Sato, a surgeon, who had gained experience in the Franco-Prussian war, the Japanese-Chinese war, and also at his own private hospital at Tokyo. This new institution is to be housed in a large two-storey building of brick and stone, connected with seven wards capable of accommodating between 200 and 300 beds, a medical school with dormitories in the same compound and residences for the staff of indoor workers.

Before the advent of the Japanese, for over twenty-five years, medical missionaries from America and England kept the torch of modern medicine burning in Korea; owing to their instruction and advice, several native Koreans engaged in the study of medicine, and some of these students obtained diplomas at medical colleges in Japan and America.

In 1893 Dr. Avison, of Toronto, Canada, went to Korea, practising first at Koo-ri-gay and afterwards at Seoul. He also engaged in the work of medical instruction at the Severance Hospital Medical School, which was started at Koo-ri-gay, and afterwards, in 1903, moved to Seoul. The teaching of Oriental students by Western professors is, as may be surmised, difficult and sometimes discouraging. As Dr. Avison remarked, when speaking at the first graduation ceremony of the Severance Hospital Medical College of Seoul, June 3rd, 1908: "Students came; but few had the perseverance to remain long enough to finish their studies." Seven young men were graduated on that day, and their record, Dr. Avison remarked, refuted the theory advanced by some that the Koreans are a degenerate race. After addressing laudatory remarks to Prince Ito, and also to the members of the Korean Government, who graced the ceremony with their presence, Dr. Avison thanked the assembly, over 1,000 persons, for their presence at the graduating exercises, "a fact which showed that the East and the West could unite in matters of humanitarian work, such as medicine."

This little glimpse of a scene in far-away Korea illustrates the cosmopolitanism of the medical profession. Medicine, based on science, and striving to alleviate human pain and disease can unite alien races and warring creeds under a single flag.

Any success won by the Japanese people and Government in conducting their Hospital and Medical School at Seoul will be of interest to Occidentals. It is a source of pride, however, to Americans and Englishmen that the first scientific practice of medicine and surgery done in Korea was by them, and the first medical teaching known in that country was given by them. To Canadians it is very pleasing to learn, from remarks made at the graduation ceremony, that Dr. Avison's pioneer work as a practitioner and teacher is recognized as being of the first utility and importance.

J. J. C.

WHY SO MANY MEDICAL STUDENTS "PLUCKED" ?

WHY so many medical students were "plucked" by the Ontario Medical Council is a question that has been as yet unanswered. We understand that between sixty and sixty-five per cent. of those who presented themselves recently for the intermediate examination before the Council were "plucked." This seems an unduly high per centage, and from both the standpoint of the Student, the Professoriate and the Examiner, is worthy of grave consideration.

From the standpoint of the Students, it seems that many of the men stood high in former tests and are really "well up" in their work. Then what, except nervousness or a lack of knowledge of the subjects, can have caused this mental epidemic of stupidity?

As to the Professoriate of the University of Toronto, are they men sufficiently well informed, never ending their student days, or are their lectures so blatantly "worked over" that they smell of the lamp, and in their wearisomeness fall as arrows shot into the air? Or are their lectures the result of an assimilation of knowledge gained by the latest in books, the deepest in thought, and crowned by the convincing power of experience, and, with all these attributes, have this professoriate the mental gift of imparting knowledge? Granted that many of these men are endowed with the gift of teaching, are the Students' seats filled with receptive listeners and learners, or are these students "flanneled fools"? Are they called not only "to science and to practice, but to the advancement of the profession"?

May we digress for a moment? From the hand of a friend a book came a day or two ago called "Confessio Mediei"; a chapter

on "Vocation" is worthy the perusal of every student. The author tritely says: "In medicine many of us are glad that we have a calling, but doubtful whether we have a call." We echo his advice to read "Middlemarch" again, and "If Lydgate's life does not touch you, ask yourselves whether you have any call to be doctors."

But let us take for granted that the teachers are the best and the pupils are apt. Then why this meagre list of those who passed the examination? Does the fault in any measure lie at the door of the examiner? Possibly some may say that the "exams" were too stiff. Can they be? Should not every man sent out to cure and stand between the death angel and valuable human life be equipped by the broadest and most liberal education?

Are the text-books used the newest and the best? Many claim the books have not been weeded out for ten years, although new ones have been added. A strange state of affairs; most things are outlawed after seven years. Why are these books living on borrowed time? Some also say that an examiner on one subject questioned his student as to a case seen only, perchance, once in a lifetime. Who knows but someone might have so remarked a few years ago about appendicitis?

It is surely the province of so learned a person as an Examiner to send out the dove to see what sort of atmospheric change is ahead!

One and all will agree that the student of to-day should be abreast of the times and the teacher and Examiner should have a *mutual* knowledge of the work during the year, and that at the testing day keen questioning along the line of special study should be introduced by the examiner.

We feel the deepest sympathy with the students in this tangled skein of affairs, for we have never ceased to be one of the boys, and one of our greatest pleasures is to dream over the yesterday of twenty-two years ago, in doing which we can almost feel the very tremor at this moment of the never-to-be-forgotten examination days. But, as the days grow into years, we realize overwhelmingly the needs of men who are to bear the honored name of physician.

As Stevenson says: "The physician is the flower (such as it is) of our civilization; and when that stage of man is done with and only remembered to be marvelled at in history, he will be thought

to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race." W. A. Y.

THE ONTARIO MEDICAL COUNCIL AND THE GLOBE.

FOR some months back, *The Globe*, (Toronto) has been attacking the Ontario Medical Council, for neglecting to discipline physicians suspected of disgraceful conduct viz.: producing abortion. *The Globe's* contentions are, that some members of the College of Physicians and Surgeons of Ontario, legally qualified practitioners, are credibly believed to be engaged in the business of producing abortion; that it is the statutory duty of the Ontario Medical Council to examine the charges against such members, and, if the charges are proved, to erase the names of the offenders from its official register.

The Ontario Medical Council is a deliberative body supported by the medical profession of Ontario—a medical Parliament—and the important issues raised by *The Globe* were fully discussed at a session of its July, 1908, meeting. A good many members of the Medical Council spoke on the question, which was settled by the carrying of a motion made by Dr. F. N. G. Starr, seconded by Dr. A. J. Johnson, viz.: "That, the attention of the Ontario Medical Council having recently been called to the prevalence of crime against the unborn, when the Council's detective becomes aware of such a case, he be instructed to lay the matter before the Prosecutions Committee, who will, after careful inquiry, pass on the evidence, when deemed advisable, to the Discipline Committee for action."

This is certainly a proper and business-like way of dealing with the issues raised by *The Globe*. It is not the business of the Ontario Medical Council to teach its members the observance of the Ten Commandments. If an important commandment, "Thou shalt not kill," is broken by an Ontario practitioner, the law court, the judge and the jury must settle the question of guilt and, if conviction follow, apportion the penalty. If convicted of a felony, a member of the Ontario College of Physicians and Surgeons loses the right to practice. The Ontario Medical Council has no option in that matter.

It is clearly the duty of the Ontario Medical Council to inquire into the conduct of any one of its members strongly suspected of being guilty of disgraceful or infamous conduct, and, if the charges against him are proved, the offender's name should be stricken off the official register.

Though animated by the kindest feelings and anxious to please his patrons, every physician should hold decided views against abortion, and should refuse to accept a case (married or single woman), if criminal abortion is asked for. To make such a statement here may seem to physicians quite uncalled-for. In explanation we would say, that clients may get a physician of repute involved in a case of abortion, for the causing of which he is not responsible. For instance, he is called to wind up a case of abortion, the initial stage of which has been brought on by the patient, by one of her lay friends, or some irregular practitioner. Should a physician hazard the stigma of crime, with its subsequent legal procedure, and loss of status, when, as a matter of fact, his sole interest in such a case would be limited to an effort to save the life of a woman attacked with puerperal septicemia? The risk to one physician is too great, and such a case should not be accepted, unless counsel is allowed. Human life is valuable, and it is a physician's duty to save it, when it is attacked. He may lay down his own life for his neighbor, but he should not imperil his good name and injure his family, through lack of professional caution in securing further professional advice.

The Globe has manfully done its duty in striving to repress a great wrong to humanity. The Ontario Medical Council must pick up the glove thrown down by *The Globe*, and uphold the honor of the medical profession of Ontario, in no uncertain way.

J. J. C.

EDITORIAL NOTES.

Hygienic Ice-Cream.—Disease may be transmitted by ice-cream, as well as by milk or cream; factories in which ice cream is manufactured should be placed under the control of the civic Health Department and be duly inspected. Only persons who keep factories suitable for the manufacture of ice cream should be permitted to sell their product. Many persons, including the sick,

use ice cream as food, and the manufactured article should be produced in the cleanest and most sanitary manner. The sale of ice cream on the streets should be regulated; the exposing, selling or handling of bulk ice cream in cans or other receptacles on the streets should be prohibited. In Chicago, (Bulletin Chicago School of Sanitary Instruction) it has been noted that ice cream is made from condensed milk, skimmed milk, or mixtures of condensed milk and skimmed milk in basements, stables and living rooms. This is the product, that is peddled on the streets and sold to children. It is dangerous to health. There is no occasion to restrict the honest activity of tradesmen doing business in a small way; but the public health should be protected against unclean or adulterated foods.

Tincture of Iodine as Sold in Canada.—Bulletin No. 142, April 15, 1908 (Laboratory of the Inland Revenue Department, Ottawa, Canada), contains interesting data respecting the quality of Tincture of Iodine as sold in different parts of Canada. In all, 75 samples of the drug, obtained throughout the Dominion, February, 1908, were examined. The report shows:

Genuine	.....	60	samples
Adulterated	(containing no free iodine)	1	"
"	(containing methyl alcohol)	9	"
"	(containing methyl alcohol and being too low in iodine)	5	
		<hr/>	
		75	

The British Pharmacopoeia (1898) prescribes a formula which contains free iodine 1 part in 40 parts, or 2.5 per cent.

Many Pharmacopoeias authorize a higher percentage of free iodine than does the British Pharmacopoeia. Thus, the French Codex prescribes 1 part in 12 parts (= 8.5 per cent.) of iodine; the United States Pharmacopoeia prescribes 1 part iodine in 14.3 (= 7.0 per cent.). In the report of the analyses, it is stated that samples in which the free iodine did not fall below 2 per cent. were allowed to pass as genuine. "Five samples are found to contain less than 2 per cent. of free iodine, and it is noteworthy that all of these are made with wood spirit (methyl alcohol) instead of ethyl alcohol, as prescribed by all the pharmacopoeias. One sample (No. 26394) contains no free iodine. . . . Fourteen samples are found to contain methyl alcohol in place of ethyl alcohol, which is prescribed

in all the pharmacopœias. Applied externally, a tincture of iodine containing wood spirit would not produce dangerous symptoms; taken internally, it would be a poison and might produce blindness. There can be no doubt that the substitution of wood spirit for ethyl alcohol is an adulteration; any druggist knowingly retailing such an adulterated tincture of iodine should be heavily fined.

Absorption of Ointments.—We notice in *The British Medical Journal*, May 23, 1908, that experiments have been made by Sutton to test the relative absorption of the various ointments by means of aniline dyes. Guinea pigs and white rabbits were used, the ointment with the dye being applied to a bare place on the skin. After a certain time the patch was excised under anesthesia and sections cut and examined. He found that lard, simple, or benzoinated, and pure goose grease were the most quickly absorbed of all the substances tested. Petrolatum is a poor penetrant, unless applied with friction. Lanolin alone is absorbed very slowly; mixed with a more fluid material, as olive oil, it readily enters the skin. The addition of a small amount of cedarwood oil to an ointment considerably increases the rapidity of absorption. The penetrating power of simple lard or benzoinated lard has been recognized in 20 of the 44 ointments of the British Pharmacopœia. Perhaps in the next edition of that work these agents may receive further recognition. It occurs to us, that either of them would be more penetrating than white paraffin ointment, which is now used in preparing unguentum acid salicylic.

X-ray in the Diagnosis of Obscure Abdominal Diseases.—It is interesting and instructive to study the revelations of skiagrams, made on living patients,—to see e.g. a patient complaining of pain in the region of the right kidney and to look at a skiagram of that kidney, which exhibits a calculus resting in its pelvis. A case of abdominal pain may excite fears of appendicitis, but the diagnosis may not be quite clear. Sir W. H. Bennett, *Lancet*, May 23, 1908, says: "In some of the deceptive cases—the cardinal sign of chronic appendicitis—swelling or induration—may be absent. But, in the dangerous pelvic type of appendicitis there may be no objective abdominal symptoms, and in the presence of other indications the mere absence of swelling or of abdominal rigidity is no justification for setting aside the possibility of organic disease of the ap-

pendix. To clear up such an enigma, an exploratory incision may be made or the use of the X-rays may be tried. The operation may do no harm, the X-rays cannot. The result with the rays may be nil; but they may disclose a stone in the ureter, a mass of tuberculous glands, a growth in the pelvic bones—any of which might cause the symptoms of which the patient complains. So, that in a case of abdominal pain of any but an obvious kind, all diagnostic resources have not been exhausted until the result of an X-ray examination have been seen." The interpretation of skiagrams requires skill, and it is better to hand over such work to a specialist. He may not be able to give a positive diagnosis of every obscure abdominal disease; but his examination will show calculi in the kidney, ureter and bladder, caseous tuberculous glands, new growths of bone, concretions in the appendix, sometimes stone in the gall bladder, and tuberculous disease of organs, and, of course, metallic and bony foreign bodies or involucra in bone.

The Canadian Formulary of Unofficial Preparations.—A second edition of the Canadian Formulary of Unofficial Preparations has been recently published by the authority of the Ontario College of Pharmacy, Toronto. "The object of this work is the establishment of uniform and authoritative standards for pharmaceutical preparations in active demand by the medical and pharmaceutical professions." Many of the published formulæ are probably intended to be used as guides in preparing substitutes for patent or proprietary medicines. Hence, their publication in the C. F. would go to show, that there is a popular demand for the latter preparations. Then, why should not the laity get what they ask for? There is no objection to a physician using a non-official preparation, and, certainly, many of the formulæ which appear in the C. F. may be used by physicians with advantage. Unless given to polypharmacy, however, a practitioner's list of formulæ is not lengthy, and the formulæ themselves rather short. He soon learns to formulate some of the official drugs in ways suitable to the conditions encountered in his practice.

Consumption of Alcoholics and Tobacco in Canada.—As shown in an Editorial Note, which appeared in our issue of last month, the consumption of spirits in Canada has declined during the past year. However, the consumption of beers

and wines showed a slight increase. The consumption of spirits during the year was .889 of a gallon per head of population, against .947 the previous year. Beer was consumed to the amount of 5.812 gallons per head, while the year previous the amount was 5.585 gallons. The consumption of wine was .096 of a gallon per head, against .092 the previous year. The average amount of tobacco consumed was 2.898 pounds per head, while the previous year it was 2.953 pounds. The growth of the cigarette habit in Canada is shown by the consumption for the past five years, as follows:

1904	.....	211, 302, 041
1905	.....	250, 860, 387
1906	.....	269, 334, 839
1907	.....	355, 170, 280
1908	.....	384, 809, 374

A considerable proportion of the cigarette consumption is due to the prevalence of cigarette smoking among youths, and it is expected that a law will be passed by the Canadian Parliament prohibiting the sale of tobacco to, or the use of tobacco by, young men who are under 18 years of age. It will be more honored in the breach than in the observance, and will probably be amended, so as to reduce the age to 16 years.

Act Respecting Proprietary and Patent Medicines.—At the evening session of the Senate of Canada, July 17, 1908, an amendment was offered to the Act Respecting Proprietary and Patent Medicines by Senator Roy. The amendment was to the effect that the words "opium, its preparations and derivatives," be eliminated from Schedule A of the bill. On a vote the amendment carried and the words quoted were stricken from the bill. Senator McMullen's amendment, providing that "patent medicines in the hands of retail merchants at the time of the passing of the Act could be sold," was also passed. The opposition to the bill in the Senate was strong, the vote for leaving it over until next session being defeated by 20 to 17. The bill is not perfect, but may be accepted as an effort to restrain the use of dangerous proprietary and patent medicines. Senator Roy's amendment materially improves the bill. Further amendments will be in order at future sessions of the Senate. This bill was referred to at length in an editorial note, which appeared in our July, 1908, number (p. 52).

J. J. C.

Toronto's Sanitary Campaign.—Toronto has passed through a brief but busy sanitary campaign. Ever since Toronto was Toronto its drainage has flowed calmly to the Bay. For forty years and more the agitation has gone on for civilized sewage disposal, and it might have gone on for forty years more, but that a movement to improve the city water supply was initiated, gathered strength and developed sufficient momentum to carry enough votes and interest to secure the passing of the two by-laws. It was a great victory for the health conscience of Toronto, and the medical profession, we are glad to say, were not found wanting. We did our part. It was in the first instance, due to the careful, thorough, scientific, faithful work of Dr. John A. Amyot that the matter came up at all. Dr. Amyot for four years quietly examined the tap water in the top-flat of the new Medical Building in Toronto University where he carries on his duties as Bacteriologist to the Provincial Board of Health. Dr. Amyot did not forget that charity begins at home, and it would have been strange indeed if he, whose work in improving the sanitary conditions all over the Province is so well known, had neglected the water, with which, like all the rest of us in Toronto, he has to wash his hands, quench his thirst and cook his food. He gave timely warning to the public and the profession, and received the invariable reward by which we know the true reformer—he was persecuted for it. But he made converts and *magna est veritas, et prevalebit*. Dr. Amyot was the real leader in the movement before and after the public began to talk of colon bacilli. The Academy of Medicine also did its part. They called a public meeting last December, which was largely influential in the campaign, and in the dark days when heads daily fell or threatened to fall they paid a bacteriologist of their own to look for those colon bacilli which had proved fatal to one bacteriologist and seriously threatened another. Altogether about \$200 was expended by the Academy in prosecuting the work. Great credit is also due to another member of the Medical Profession, Controller Harrison. But for him the by-laws would probably not have been brought forward at all, nor would they have been carried. Dr. Harrison devoted himself to this work with an energy, an earnestness and a thorough knowledge of the subject that are beyond all praise. He delivered about thirty addresses in the campaign which did much to enlighten the citizens and inform the public mind. Dr. Sheard,

the Medical Health Officer of Toronto, with that force and vigour for which he is famous, plunged into the campaign with enthusiasm and contributed very largely to its success. From his eloquent speech at the first meeting and from the many addresses which he has delivered for years past, especially on the sewage disposal question, and from the press interviews, and information laid before the citizens from time to time, and the frequency with which all conversant with the matter refer to these, it is evident that Dr. Sheard's influence did a great deal to carry the by-laws. Finally, the Medical Profession provided an *advocatus diaboli* for the movement, in the person of ex-Ald. Dr. John Noble, who, with the able assistance of ex-Ald. Davies, conclusively proved to the citizens that there are no arguments against the by-laws. Besides, the women of Toronto helped the men. This is an old favorite combination which for real hard work cannot be excelled. Pure water and proper sewage disposal will usher in a new era for Toronto, and her example will be widely followed. Many other members of the profession in the city aided in this important sanitary movement, among whom may be mentioned Professor Oldright, who has strongly advocated sewage disposal for many years, and Dr. W. L. T. Addison, Secretary of the Department of State Medicine in the Academy.

H. MACM.

PERSONAL.

DR. W. H. B. AIKINS has returned from Europe and, resuming work, will engage in consultation and office practice.

DR. J. K. ELLIOTT, 611 Spadina Ave., announces that he will be at Port Carling, Ont., from July 4th, returning to Toronto September 17th.

DR. J. T. FOTHERINGHAM, 20 Wellesley Street, Toronto, announces to the profession that after his return from London, about September 1st, he will confine his work to office and consultation practice, including the diseases of children.

THE old and reliable house of Wm. R. Warner & Co., will be incorporated under the laws of Pennsylvania, with Mr. Wm. R. Warner, Jr., retaining his connection as President of the corporation. This move enables Mr. Warner who has managed the entire business, to transfer to others many of the details of management and at the same time, assures his host of friends and patrons in the Trade, of a continuation of the safe and conservative policy, which has proven the keynote of its success and which has characterized it from its foundation in 1856.

THE Canadian Medical Exchange, conducted by Dr. Hamill, Toronto, Medical Broker for the purchase and sale of medical practices and properties, has at the present time between 20 and 30 medical practices for sale, which will average from \$2,500 to \$5,000 per year, and he will be glad to pilot bona fide buyers who register with him, to any of these that might suit them. Full details of his methods can be obtained by dropping a letter to 75 Yonge St., Toronto. The Canadian Medical Exchange certainly offers a short-cut for any physician who desires to find an opening where a lucrative practice can be done.

ANTI-MENINGITIS SERUM NOW PROCURABLE IN TORONTO.—Through the kindness of Dr. Simon Flexner, anti-meningitis serum is now procurable in Toronto. It can be got any time, free of cost, at the Hospital for Sick Children, College Street. Directions for use will be sent with the serum. An editorial in the June issue of *Archives of Pediatrics* gives all required information as to the efficacy of Dr. Flexner's preparation.

Correspondence.

The Editor cannot hold himself responsible for any views expressed in this Department.

THE H. K. MULFORD CO.'S A. M. A. SCIENTIFIC EXHIBIT.

The following letter explains itself and contains facts worthy of publication, as showing that H. K. Mulford & Co. are anxious that the medical profession know just what they are doing in the manufacture of scientific products:

Editor, CANADIAN JOURNAL OF MEDICINE, Toronto.

Dear Sir,—The object of our Scientific Exhibit at the recent annual meeting of the American Medical Association at Chicago, was to illustrate by specimens, models and descriptions the production of Antitoxin, Curative Sera, Smallpox Vaccine, Bacterial Vaccines and Tuberculin. The exhibit is part of the permanent museum now being developed in connection with our Scientific Department and School of Instruction. Hitherto it has been considered necessary by manufacturers to conceal their methods as far as possible with the view of protecting capital invested in the business. We are making a radical departure from this and have adopted a new way, namely, the way of publicity, believing that the more physicians have the opportunity of knowing just what we are doing and how we are doing it, the greater will be the confidence of the profession in the H. K. Mulford Company and its products.

Yours very truly,

H. K. MULFORD COMPANY.

Milton Campbell, President.

News of the Month.

ONTARIO MEDICAL COUNCIL EXAMINATIONS.

THE following candidates passed the final examination of the council:—

R. T. Adam, Lindsay; A. E. Aikinhead, Brucefield.

H. H. Black, London; E. Boyd, Toronto; G. F. Boyer, Kincardine; J. Burns, Palmerston; G. S. Buck, Lindsay; H. W. Bell, Port Hope; A. Baxter, Toronto; H. A. Boyce, Murray P.O.; G. A. Bates, Toronto; W. W. Brydon, Brampton, and W. Bailie, Toronto.

T. H. Callahan, Wooler; O. A. Cannon, Walkerton; M. B. Campbell, Toronto; G. R. Crann, Queensville; J. Christie, Webbwood; G. L. Cockburn, Sturgeon Falls; M. Calder, Innisfail, Alberta; W. F. Cornett, Kingston.

J. Duncan, Toronto; B. S. Elliott, Ingersoll; J. A. Evans, Islington.

R. W. Faulds, Burwell Road; G. C. Gray, New York, N.Y.

C. C. Hartman, Aurora; R. E. Holmes, London; H. Huebner-gard, Berlin; A. W. Hunter, Durham.

H. B. Johnston, Vernonville; W. J. Johnston, Wareham; P. J. Kirby, Arthur; R. Kenny, Sarnia.

J. H. Lawson, Brampton; G. E. J. Lammie, South Mountain.

J. MacLachlan, Toronto; D. W. MacKenzie, Toronto; J. D. Milne, Delaware; F. S. Macpherson, London; N. Munro, St. Thomas; T. Morrison, Hamilton; A. H. Morgan, Moorefield; A. D. McArthur, Greenbank; A. D. McCannel, Minot, North Dakota; C. S. MeVicar, Ailsa Craig; O. A. McNichol, Toronto; J. M. McReuer, Ayr; R. D. McAlpin, London; W. L. McBroom, London.

O. J. Newell, Aylmer.

A. P. Ovens, London.

R. D. Paul, Chicago; W. C. Pepin, Windsor.

W. G. F. Russell, London; G. W. Racey, Kingston; E. H. Relyea, Cornwall; A. G. Rice, West Toronto; F. W. Routley, Toronto.

P. J. Sproule, Listowel; L. J. Simpson, Thornton; A. T. Spankie, Wolfe Island; S. Stinson, Brighton; A. B. Schinbien, Listowel; J. H. Sullivan, Ottawa; G. E. Seldon, Ingersoll.

R. R. Todd, Toronto; F. H. Trousdale, Kingston.

R. A. Williams, Ingersoll; S. T. White, Toronto; A. I. Willinsky, Toronto; N. R. Wilson, Toronto; E. H. Young, Kingston.

The following candidates have passed the intermediate examinations:—

C. E. Anderson, Philadelphia; H. K. Bates, Woodstock; H. H. Black, London; E. Boyd, Toronto; B. E. Biggs, Burlington.

S. V. Carmichael, Spencerville; A. L. Campbell, Belmont; D. W. Clark, Ballyduff; W. F. Cornett, Kingston.

R. E. Davidson, Beachburg; W. E. C. Dey, Shallow Lake; C. Elmore, Springvale.

H. L. Emmett, Fonthill.

H. W. Faulds, Burwell Road; H. W. Feidhands, Copper Cliff; J. M. Fowler, Petrolia; F. J. Folinsbee, Strathroy.

W. B. Gibb, Toronto.

F. C. Harrison, Toronto; W. A. Harvie, Orillia; A. W. Hunter, Durham; H. E. Hamill, Meaford; J. G. Harkness, Juna; C. E. Hill, Toronto; B. B. Horton, Napanee; Laura S. Hamilton, Toronto.

T. J. Johnston, Carthage; C. V. Jamieson, Guelph.

J. N. Kelly, Addison; J. E. Keyes, Oakwood.

J. H. Lawson, Brampton; G. E. J. Lamm, South Mountain.

C. R. Mackenzie, St. Thomas; F. S. Macpherson, London; A. H. Miller, Castleton; A. H. Morgan, Moorefield; L. G. McCabe, Waterdown; W. G. McCulloch, Enfield; H. M. McFadden, Millbank; N. McLeod, Moose Creek; A. A. McLean, Clachan; O. A. McNichol, Toronto.

W. Pratt, Cobourg; W. C. Pepin, Windsor.

A. G. Rice, West Toronto; A. C. Ricker, Dunnville; W. A. Robertson, Monkton; J. A. Routledge, Dunkeld; F. W. Routley, Toronto; G. W. Racey, Kingston; E. H. Relyea, Cornwall; C. E. Rowland, Toronto.

J. M. Smith, Cammington.

F. H. Trousdale, Kingston.

E. S. Walker, Glencoe; S. T. White, Toronto; H. Williams, Allanford; A. I. Willinsky, Toronto; N. R. Wilson, Toronto; E. H. Young, Kingston.

UNIVERSITY APPOINTMENTS.

THE Board of Governors of the University of Toronto has made the following announcements in connection with the staff:

To be Professor of Mathematics—A. T. Delany (promoted from associate professor).

To be Professor of Mechanics—W. J. London (promoted from associate professor).

Also the following for the session 1908-9:

To be Physical Director and Secretary of the Athletic Association—Dr. J. W. Barton.

To be Lecturer in Physics—H. F. Dawes, B.A.

To be Assistant Demonstrators in Physics—H. A. McTaggart, M.A., J. K. Robertson, M.A., V. E. Pound, M.A.

To be Class Assistants in Physics—J. A. Gardiner, B.A., W. T. Kennedy, B.A.

To be Fellows in Mathematics—A. E. Johns, B.A., S. Beatty, B.A., L. N. Richardson, B.A.

To be Senior Assistant in Chemistry—R. J. Mauning, M.A.

To be Demonstrator in Physiology—F. R. Miller, M.B.

To be Lecturer in History—K. G. Feiling, B.A.

To be Lecturer in Ancient History and History—A. G. Brown, B.A.

To be Fellow and Librarian in the Department of Psychology—Miss M. I. Jansen, Ph.D.

To be Class Assistants in Psychology—C. A. Lazenby, J. R. Harris.

To be Instructor in Greek—W. H. Tackaberry, M.A.

To be Instructor in English—W. H. Cawson, Ph.D.

To be Instructor in French—L. H. Corbett, B.A.

To be Demonstrators in Pathology—G. Silverthorn, M.B., C. J. Wagner, M.B., W. H. Pepler, M.D., C.M., H. C. Parson, M.D., C.M., F. A. Clarkson, M.B., G. W. Howland, B.A., M.B., H. S. Hutchison, M.B., B. O'Reilly, M.D., C.M., J. Graham, M.B., W. S. Lemon, M.B.

To be Demonstrators in Clinical Surgery—S. Silverthorn, M.B., F. S. Ryerson, M.D., C.M., W. J. O. Malloch, B.A., M.B., W. W. Jones, B.A., M.B., S. H. Westman, M.B., W. A. Scott, B.A., M.B., M. H. V. Cameron, M.B.

To be Demonstrator in Dermatology—D. King Smith, M.B.

To be Demonstrators in Gynaecology—F. W. Marlow, M.D., C.M., Helen MacMurchy, M.B.

To be Demonstrator in Obstetrics—J. A. Kinnear M.D., C.M.

To be Demonstrators in Clinical Medicine—D. McGillivray, M.B., G. W. Howland, B.A., M.B., T. D. Archibald, B.A., M.B., W. J. McCollum, M.B.

To be Assistants in Clinical Medicine—C. J. Wagner, M.B., B. O'Reilly, M.D., C.M., J. S. Graham, M.B., A. H. Adams, B.A., M.B., E. E. Cleaver, B.A., M.B.

To be Lecturer in Architecture—A. W. McConnell, B.A.Sc.

To be Lecturer in Drawing—T. R. Loudon B.A.Sc.

To be Lecturer in Applied Mechanics—C. R. Young, B.A.Sc.

To be Lecturer in Electro Chemistry—S. Dushman, B.A.

To be Demonstrators in Electrical Engineering—F. R. Ewart, C. S. Dundass, W. S. Guest, R. H. Hopkins, F. M. Wood.

To be Fellow in Electrical Engineering—J. F. Procmier.

To be Fellow in Hydraulics—W. S. Pardoe.

To be Demonstrator in Chemistry—H. M. Lancaster.

To be Fellows in Chemistry—T. E. Rothwell, D. E. Beynon.

To be Fellows in Electro Chemistry—L. V. Redman, H. P. Mills.

To be Demonstrator in Surveying—E. W. Banting.

To be Fellows in Surveying—A. L. Ford, R. C. Purser, O. Rolfson.

To be Demonstrators in Drawing—L. R. Thomson, J. A. Stiles, R. W. Moffatt, A. D. Lapan.

To be Fellows in Drawing—R. E. C. Chadwick, C. Wright, G. G. Mills, E. W. Neelands, H. M. Hyland, A. B. Garrow, T. Taylor, A. B. Mitchell, M. H. Woods.

To be Demonstrator in Applied Mechanics—W. G. Swan.

To be Fellows in Physics—W. C. Blackwood, A. A. Kinghorn.

To be Lecturer in Household Economics—Miss M. B. Tamblyn.

To be Instructor in Household Science—Miss N. L. Pattinson, Miss M. A. Craig.

To be Instructor in Physiological Chemistry—Miss O. G. Patterson.

To be Laboratory Assistant in Household Science—Miss H. S. Graham.

To be Lecturer in Forestry—A. H. D. Ross, M.A., M.F.

The Physician's Library.

BOOK REVIEWS.

Green's Encyclopedia and Dictionary of Medicine and Surgery.
Vol. Eight. Physiology to Rhinolalia. Edinburgh and London:
Wm. Green & Sons.

Volume Eight of this series is a worthy successor to those already to hand. It touches practically everything from an article (2nd half), covering 100 pages on Physiology (Nutrition of the Tissues) by Prof. Noll Paton, to one on Rheumatism about 45 pages in length. The volume includes 58 articles of more than 1,000 words in length, some of which deal with Pigments of the Body and Excreta, the Pituitary Body, Plague, Diseases of the Pleura, Pneumonia, Post-Mortem Methods, Prescribing, Prostate Gland, Psoriasis, the Puerperium, Quarantine Rabies, Radium, Refraction, Relapsing Fever and Retinosecopy. Besides these articles there are over 60 consisting of less than 1,000 words in length

W. A. Y.

International Clinics. A Quarterly of Illustrated Clinical Lectures and especially prepared original articles. Edited by W. T. LONGCOPE, M.D., Philadelphia, U.S.A., with the collaboration of William Osler, M.D., Oxford; John H. Musser, M.D., Philadelphia; A. McPhedran, M.D., Toronto; Frank Billings, M.D., Chicago; Chas. H. Mayo, M.D., Rochester; Thos. H. Roteh, M.D., Boston; John G. Clark, M.D., Philadelphia; James J. Walsh, M.D., New York; J. W. Ballantyne, M.D., Edinburgh; John Harold, M.D., London; Richard Kretz, M.D., Vienna. Volume I., eighteenth series. 1908. Philadelphia and London: J. B. Lippincott Company. Volume II., eighteenth series. 1908. Philadelphia and London: J. B. Lippincott Company.

We find, among the contributors to Vol. II., such names as Leslie Buchanan, of Glasgow; Chas. G. Cumston, of Boston; Louis Fischer, New York; W. S. Gottheil, New York; J. B. Roberts, Philadelphia; F. Parkes Weber, London, and H. Gideon Wells, Chicago. The Volume consists of Clinical Lectures on Treatment, Medicine, Surgery, Gynecology, Ophthalmology, Dermatology, Orthopedies, Pediatrics and Pathology. The lectures are fully up to the usual high standard of International Clinics, a quarterly that is now looked forward to by its subscribers four times a year.

Adenomyoma of the Uterus. By THOMAS S. CULLEN, M.B., Associate Professor of Gynecology in Johns Hopkins University. Large octavo of 270 pages, with illustrations by Hermann Becker and August Horn. Philadelphia and London: W. B. Saunders Company. 1908. Canadian agents: J. A. Carveth & Co., Limited, Toronto.

If asked to name the very best work in scientific medicine ever done on this continent, Walter Reed's yellow fever investigations would be at once submitted by those most in touch with medical progress. If in similar manner one should be asked to select the very best monograph dealing from clinical and pathological standpoints with a single surgical subject, the reply might require a good deal of discriminating judgment.

After a somewhat careful reading of this latest, but let us hope not last, work of Dr. Cullen's, the writer of this notice is unable to recall any other work of similar character to which precedence should be accorded.

Fourteen years ago a case came under Dr. Cullen's observation in which the true pathology of uterine adenomyomata stood out with sufficient prominence to make it a demonstration and not simply the basis for a new theory. Following this up through long years of patient and accurate study, carried on with unrivalled facilities and with abundant sympathetic and highly skilled assistance, he has here presented 90 cases of a diseased condition hitherto counted as rare, and has cleared up the last uncertainty as to its real nature. The warmest congratulations of the profession in this, the land of the author's nativity, will go out to him on the completion of his undertaking in the presentation of the sumptuous volume before us.

The book is dedicated to the Rev. Thomas Cullen, a Methodist minister, widely known and much beloved during a lifetime of labor in this Province.

N. A. P.

Collier's, the Splendid Canadian Weekly—

A splendid opportunity has been seen and seized by Collier's Weekly which now enters the Canadian field and publishes in Toronto. It is of a piece with the general enterprise of this great publishing house that it should be the first United States periodical to do this. The twentieth century is to belong to Canada, and Collier's idea, no doubt, is to help Canada's growth and share in its prosperity. A four-thousand-mile wide nation like Canada merits all the attention a big weekly can give it. What cannot be done from New York can be done very well from Toronto. The man on the spot, breathing this air, thinking what Canada thinks, saying what Canada says,—this doubtless, is what Collier's has in mind.

Canada is not overburdened with national weeklies. The field is almost virgin. A policy of truth, and fearless independence supported by pictures and timely articles—such a policy, in short, as Collier's has pursued in the United States, should pay proportionately well here. There is plenty of truth yet to be spoken, there are plenty of readers who like to read it, and there are, unquestionably, plenty of advertisers who will appreciate a national medium.

Collier's, we assume, will be found as usual urging the greatest good of the greatest number. It will not be a respecter of persons when there is a wrong, high or low, to be righted. It will be kind to virtues, but not blind to faults, for praise and nothing else, helps not the soul. All things human and Canadian will interest it and it will therefore be interesting. If it is wise, it will make its appeal to young Canada—Young Canada that has grown since Confederation, Young Canada glorying in the thews and sinews of its manhood, the same Young Canada that is going to own the twentieth century and make it pay dividends.

There can be little question of the sympathies of Collier's new Canadian editor, Mr. F. H. Gadsby. He is part and parcel of that Young Canada which makes up, perhaps, nine-tenths of the voting strength of this country. It is greatly to his credit that he has not belonged to other nations for any length of time, but has been a good enough Canadian to come back and remain in the country where he was born and bred. Much of Mr. Gadsby's best work has been done as editorial writer, special writer and paragrapher, on the *Toronto Daily Star*. His "On Parliament Hill" sketches from Ottawa gave him a national reputation and his "Gallery Clock" made quite as big a hit in Ontario politics. His "Gallery of Notables" series is still treasured in many scrap books awaiting the time Mr. Gadsby shall gather them into a book. For ten years the initials H. F. G. have been familiar to readers all over Canada. Nobody ever saw them at the bottom of a dull story. That Mr. Gadsby is with Collier's is in itself a guarantee that its policy will be truly Canadian, that its opinions will be gracefully and wittily expressed, and that there will not be lacking the sincere milk of the word.

Proceedings of the Royal Society of Medicine. Vol. I., No. 8. June, 1908. Longmans, Green & Co., London, New York, Calcutta and Bombay. Price, seven shillings and sixpence, net.

The June issue of this very excellent work has just reached us, and is in no respect inferior to any preceding volume. It would seem, in fact, as if the *Proceedings of the Royal Society of Medicine* were getting better all the time, the editor being evidently determined to give the profession the best in medical literature. The

June volume is composed of the usual sections, Clinical, Dermatological, Electro-Therapeutical, Epidemiological, Laryngological, Medical, Neurological, Obstetrical and Gynecological, Odontological, Otological and Surgical.

The next number will complete the first volume, and will be issued early this month, August.

Oxford Medical Publications: Rotunda Practical Midwifery. By ERNEST HASTINGS TWEEDY, F.R.C.P.S., Master of the Rotunda Hospital, and G. T. WRENCH, M.D., late Assistant Master. Price \$5.00. London: Henry Frowde, Oxford University Press, Hodder & Stoughton, Warwick Square, E.C. 1908. Toronto: D. T. McAsh & Co.

This is a really charming book. When reading it one seems to be absorbing the clinical experience of a master in midwifery, who tells in a clear-cut way how to do this, that or the other obstetrical operation.

Sapremia and Septicaemia are adequately dealt with; as much can be said for the chapter on eclampsia. Antisepsis is a marked feature in Rotunda work and is doubtless causative of a small morbidity there.

There does not seem to be any morbid condition met with in obstetrics, which is not described in this book. The methods of others are mentioned; the Rotunda method is given in full. The illustrations are capital.

This book should have an enormous sale.

J. J. C.

The Practical Medicine Series, comprising ten volumes on the year's progress in Medicine and Surgery; under the general editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. II., General Surgery, edited by John B. Murphy, A.M., M.D., LL.D., Professor of Surgery in Rush Medical College (in affiliation with the University of Chicago.) Series 1908. Chicago: The Year-Book Publishers, 40 Dearborn Street.

The present volume is one of a series of ten issued at about monthly intervals, and covering the entire field of medicine and surgery, each volume being complete for the year prior to its publication on the subject of which it treats. This series is published primarily for the general practitioner, at the same time the arrangement in several volumes enables those interested in special subjects to buy only the parts they desire.

It is quite impossible to review the entire contents of this volume of surgery in the Practical Medicine Series, for the book itself is a review of the surgery of the year 1907. There is a good article on Bier's treatment, with some of the apparatus shown. General, local and spinal anaesthesia from the newer points of view are considered at length, as well as the various methods adopted to

prevent the after vomiting. Many of the methods dealing with gastric and duodenal ulcer are still on trial, while perforative peritonitis is beginning to yield to the more advanced surgical treatment, and give a large percentage of cures.

On pages 209, 210 and 211, we find a short article on Cleft Palate. The article comments very favorably upon Dr. F. N. G. Starr's new method of dealing with this condition, being an abstract of the Doctor's paper appearing in *THE CANADIAN JOURNAL OF MEDICINE AND SURGERY* about a year ago. The author of the book says as follows: "F. N. G. Starr introduces a new method of dealing with Cleft Palate. The technic varies somewhat from the Langenbeck operation, and saves time, which is an important factor. The child is placed upon a table with a sandbag under the shoulders, while the surgeon stands to the left. Hewitt's gag is placed in position and the tongue drawn well forward by means of a silk suture. The first lateral incision is made well out to the alveolar margin of the hard palate, carrying it beyond the anterior extremity of the cleft, if the cleft does not extend through the margin. With the periosteal elevator the muco-periosteum is quickly denuded from this side; then with Lane's curved seissors the palate aponeurosis is snipped from the posterior margin of the hard palate, thus freeing the flap from its bony attachment. The flap should be freed anterior to the cleft. This incision may then be packed with a piece of sea sponge, while one proceeds to the opposite side to deal with it in the same way. The first packing may now be removed, when one finds that all hemorrhage has ceased. The edges of the flap are then removed with a small tenotomy or cataract knife, making certain to cut as thin a slice as possible, at the same time taking the whole thickness of the flap margin. By the time denudation has been carried to the anterior angle on one side, the packing from the other may be removed, and denudation proceeded with on the other flap. While the raw edges are still oozing, and before there is time for the mucus to glaze them over, begin suturing, commencing at the anterior angle and proceeding backward. Horsehair is used, and each suture is passed about 1-8 in. from the margin and from 1-8 to 1-4 in. apart. These are left long until all have been passed when they may be quickly tied. Lane's needles and needle-holder are used and greatly facilitate the work. A piece of aluminum, gauge 36 in thickness, is taken and bent to an angle to fold over the outer side of the flap, pass it through one lateral incision; then, by passing a pair of forceps into the opposite lateral incision, grasp the free end and pull it down into the mouth cavity again, carry it across to the point at which it entered, and there cut off any excess. With a heavy needle one may then easily penetrate the metal at one or two points, as required, and pass a horsehair suture and tie it to prevent the free end scraping and irritating the tongue, or the free

end may be turned up into the lateral incision again and pinched with a pair of forceps. The operation takes from 25 to 50 min. The aluminum may be left in 8 or 9 days, when it is removed by cutting it across close to the lateral incision and the stitches taken out. The lateral incisions then rapidly heal, and the patient may leave the hospital in 10 to 14 days.

The advantages of the aluminum splint are: It prevents tension and prevents—till union of the edges has occurred—adhesion taking place between the mucoperiosteum and the bone of the hard palate. Some cases have gone bad because of this, in that while there may be no tension at the completion of the operation, yet, when such union begins, tension upon the edges of the flap may be sufficient to separate them by tearing out the stitches. Then, too, it prevents the child sucking the stitches. To avoid infection, the mouth is sprayed with a solution of boric acid and 10 per cent. rectified spirit, which may easily find its way under the splint and remain in contact with the wound some time.

Bier's Hyperemic Treatment in Surgery, Medicine and all the Specialties: A Manual of Its Practical Application. By WILLY MEYER, M.D., Professor of Surgery at the New York Post-Graduate Medical School and Hospital, and Professor Dr. VICTOR SCHMIEDEN, Assistant to Professor Bier at Berlin University, Germany. Octavo of 209 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, \$3.00 net. W. B. Saunders Company, Philadelphia and London. Canadian Agents: J. A. Carveth & Co., Ltd., Toronto.

In view of the present prominent part that Bier's Hyperemic Treatment is playing in the treatment of tubercular and other infections, the book by Willy Meyer and Victor Schmieden is most useful. In it the technique of the various apparatus required is carefully gone into. It is a comprehensive manual that enables, not only the surgeon and the specialist, but also the general practitioner to become familiar with the method. If, when the practitioner get an infected finger, he will place a rubber band around the finger, well above the site of injury, he will be surprised to find that the pain and throbbing will cease almost immediately. By a little personal experience of this kind he will also learn perhaps more quickly than any other way the required tension for a given case. At the Hospital for Sick Children the treatment has been extensively used in tuberculous disease of bones and joints with great success. It has been of service too in securing closure of old empyema sinuses.

This manual should be in the hands of, and carefully studied by, every practitioner, and then efforts to close off discussion upon the subject of Bier's treatment in our Medical Societies would not be so common.

F. N. G. S.

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Original Contributions.

HYPODERMIC ANESTHESIA.*

BY D. DUNTON, PARIS, ONT.

THE question of hypodermic anesthesia has apparently not excited a very lively interest among our Canadian surgeons and physicians, but our professional neighbors have put it to the test and are constantly using that method. What is meant by hypodermic anesthesia is the production of general anesthesia by hypodermic medication.

It has been already used in many thousands of cases with only four deaths reported under its use, and it is claimed that those were not due entirely to the anesthesia. Therefore, it would seem worth while for us to look into it and ascertain if it has any advantages over the ordinary anesthesia, namely, ether and chloroform.

It would be a decided advantage to find something easier to administer and safer than the volatile anesthetics, for none will deny that there is considerable danger associated with ether and chloroform narcosis.

During the present month there was one death from chloroform in the dentist's chair reported by the newspapers in our own province.

Dr. Samuel Johnston, an expert in anesthesia, has even thought it worth while to write an article for *The Canadian Practitioner* on the "Danger Signals of Anesthesia."

The mortality statistics taken from large hospitals, where they have special anesthetists and the best appliances and assistance, do not look very formidable.

* Read before the Ontario Medical Association, Hamilton, 1908.

Gault found in 330,000 cases of anesthesia that the mortality from chloroform was 1 in 2,075, ether 1 in 5,112, A. C. E. 1 in 3,370, ethyl bromide 1 in 5,396.

But when a practitioner runs up against the actual experience with his own patient then it impresses him in a different way. My reason then for bringing to your notice the hypodermic method is to have it put to the test and pronounced upon by members of this association. If it is better we should know it, and if it is safer we should use it.

Every one of us is called upon to administer anesthetics. Sometimes we even have to anesthetize and then operate. We cannot all become experts or even proficient. It is, therefore, of immense advantage to have an anesthetic that will not demand such close attention when we are short-handed. The hypodermic method is admirably adapted to such cases, besides being quite as safe as any other kind.

The formula for one tablet is:

Chemically pure hyoscine hydrobromide	gr. 1-100
Chemically pure morphine hydrobromide	gr. 1-4
Cactin (from cactus grandiflorus)	gr. 1-67

Dosage.—Two hours before the operation one tablet is given, hypodermically in the arm, one-half hour before the operation another tablet is given. If the patient is not sleeping soundly at the end of the half-hour a few drops of chloroform may be given.

That would answer for such operations as appendectomy, lacerated cervix, thyroidectomy, etc.

For major operations such as trephining, hysterectomy, amputation of the thigh, three tablets may be given, and not a drop of chloroform used. One, two hours before; one, half an hour before operation, and one when the patient is put on the table. Is it safe? Not absolutely, for from the very nature of the case no anesthesia can be. Four deaths have been reported as being partially due to this method of narcosis out of many thousand cases used by 15,000 doctors.

The advantages of hyoscine-morphine-cactin anesthesia are best given in the words of Dr. Garcia, of St. Louis, who has used it in fifty-five cases. He says: "The advantages of H. M. C. Tablet, I find, are the avoidance of shock and fright on entering the operating-room, and the absence of nervous tension of hours preceding the operation. This is of great import as one will find by studying patients before operation; absence of nausea following operation and the continuance of sleep for a few hours. The uniformity of anesthesia is, to my mind, the best of all effects. Every operator will realize how difficult it is to obtain anesthesia of equal depth throughout entire operation. This tests the skill

of the best anesthetists, and I can best secure this by the tablet and chloroform combined. With few exceptions, two full-strength tablets were used; one immediately, and the other, one hour preceding operation, and about one-half ounce chloroform used in addition, for the work of an hour or more.

"The tablets, I believe, render the chloroform more safe, owing to the stimulation of both morphine and cactin. In a few cases I tried three full-strength tablets, and all these patients were operated on without chloroform, but in all, there was some cyanosis which perturbed me."

Dr. H. O. Walker, of Detroit, states that he has used the hyoscine-morphine-cactin compound in ninety-two cases to March, 1907. He says: "I have used them in extreme cases of age. While I had two deaths, they were not in my estimation due to the anesthetic.

"The boy of ten, on whom it was used received a severe injury in a railroad accident, necessitating the removal of one leg, above the knee, while the other was denuded of fully one-fourth of its integument. On the seventh day he developed tetanic spasms. One tablet was given twice daily for several days, when it was dropped to one daily. He made a good recovery.

"The gentleman, aged 82, physician, Senator of Ontario, was given one tablet hypodermically two hours before the operation on Saturday, January 19. About 60 drops of chloroform were used. He had chronic intestinal obstruction, due to malignant growth in the cecum. I short circuited with McGraw ligature, the ascending colon with the ileum. The operation was done at 8 o'clock in the morning, and in the afternoon he asked why they had not taken him into the operating-room.

"My experience has been very satisfactory with its use. For instance, one case in which I had a double amputation of the thigh three tablets were given and no chloroform used. The patient woke up late in the afternoon, and asked why he had not been operated upon—a usual question in such cases."

In some quarters it is claimed that hyoscine is identical with scopolamine, which has a number of fatalities charged against it.

Here is the opinion of Prof. Thrush, of Philadelphia, bearing on the similarity. He says: "The dominant action of hyoscine is on the cerebral cortex. It is also a centric depressant of respiration and depresses the whole motor cord. Its influence on the circulation is only slight. No fatal case of poisoning by hyoscine alone is on record, according to the Elder Wood.

"Hyoscine and scopolamine, while of the same chemical composition, differ in physiological results, for the following reasons. In the first place hyoscine, scopolamine and cocaine are all the

same chemical composition, C 17, H 21, NO 4, yet the tyro in therapeutics knows the physiological action of cocaine differs greatly from the other two. In fact it is almost entirely different in its action. How then can we account for this? By the fact that there is a different arrangement of atoms composing the molecule.

"I think we are justified in saying that the mortality statistics which have been quoted from time to time relative to scopolamine-morphine anesthesia do not apply to hyoscine-morphine anesthesia. And I feel sure that they do not apply to hyoscine-morphine-cactin anesthesia."

My personal experience has been very limited. It covers sixteen surgical and twenty-six obstetrical cases. It is so easy and safe to administer, and I would much rather trust the nurse to give the few drops of chloroform that may be needed than to give a much larger dose of chloroform covering an hour more or less in obstetrical cases.

Only one tablet was used in my first trial that was not a success.

The next was one of hemorrhoids in a man, aged 50. I gave one tablet at 2 o'clock and one at 3.30, and at 4 o'clock. I used the clamp and canter. The only resistance offered was during dilatation of sphincter. He slept well during the night, the next day the bowels moved with slight pain.

The H.M.C. narcosis served me well in an irreducible hernia that I was called to during the night. Finding I could not reduce by taxis, I injected one tablet at 2 a.m., and half of one at 3 o'clock with the idea of operating if found necessary. At 3.30 the hernia was crowded into the abdomen with gentle manipulation. Another half tablet would have completed the anesthetic effect, ready for the knife.

I am convinced that the H.M.C. compound will be even more useful in obstetrical than it is in surgical practice.

The use of one or two tablets will carry the parturient woman over her labor with comparative comfort.

Labor does not appear to be prolonged unless the first hypodermic is given before the second stage has well set in. My practice is to give the first hypodermic when the pain becomes troublesome if the os is dilated or easily dilatable, then one-half tablet every hour or more, just sufficient to keep her "doped," and I give none at, or near the termination of labor, lest it affect the child. Ordinarily the narcosis does not affect the child. In one instance after a prolonged forceps case, the baby could not be resuscitated, but I could not say the anesthetic was the cause of death. Both tablets and chloroform had been used.

In forceps cases I like the H.M.C. compound better than chloroform for the narcosis is more even, and when there is only partial anesthesia there is less resisting on the part of the patient. The hyoscine, being a motor depressant, would account for the difference. The slight difference is a decided advantage when enough help is not at hand.

The few hours of sleep the patient obtains after the toilet has been made frequently carries over the period of irritating after-pains.

For the accoucher it is the ideal anesthetic for he can obtain the desired effect without fear of an overdose.

The report of Gauss' 1,000 women delivered at the University of Frieberg under the influence of scopolamine-morphine is full of interest.

Scopolamine-morphine has been used as an anesthetic for surgical and gynecological operations by Kroenig, Kummel, Rotter and others. But to Dr. Gauss, of Frieberg, belongs the credit of discovering that by repeated injections of small doses of these two drugs, a peculiar state of half-consciousness is produced, in which the patient still perceives sensations, including pain, but retains no memory of these sensations afterwards.

In his first 300 cases it worked well, in 78 per cent. afterwards it was shown that if the time suffices before delivery, the method rarely fails to accomplish the desired result. It gives such relief from labor-pains, that the women beg for more injections.

But its greatest value, if time should justify Gauss' claims, lies in the effect on the mother, namely, in preventing nervous and mental diseases by sparing her the psychic trauma of childbirth.

The dosage is based on the memory sensation: that is, the repeated injections are given one hour or more apart, until the patient's memory is lost to objects she had been shown a few moments before. Then no more is given unless she awakens out of the narcosis. After the first dose sometimes scopolamine is given alone.

Gauss places great stress on the purity of the scopolamine. The same applies to hyoscine. In most cases four injections at intervals of one hour or more serves to sustain semi-consciousness until after the birth.

In the Frieberg clinic, the ears are plugged, and the room is kept as quiet as possible.

As to the duration of labor, comparison is made with the figures of Veit and Bumm. There is very little difference shown. It is possible that labor is slightly prolonged under scopolamine-morphine.

Gauss has never seen any vomiting unless it had already occurred before the injections. Dizziness is rarely complained of, and headache, diarrhea or constipation almost never.

The scopolamine has been observed to have an unfavorable effect on the heart; for that reason it is rational to use the cactin.

The effect on the child. Gauss found that extra precaution is necessary in looking after the child, owing to the liability to asphyxiation.

Sixty-five of the first 500 were born asphyxiated; 13 per cent. in the second 500, only half as many were asphyxiated and the mortality was 3.1-2 per cent. less than during the previous ten years at the Frieberg clinic.

Only one death occurred in the first 500, and that was due to rupture of uterus.

In first 500 forceps were used 49 times, in the second only 25 times.

In conclusion, allow me to give you the conclusions of Dr. Emory Lanphear, of St. Louis, who has used the tablets in nearly 1,000 cases without any trouble at all. He says: "My opinion is that ultimately this combination will be used more extensively for partial anesthesia, total unconsciousness being induced by a trifling amount of chloroform by inhalation, the full analgesic effect of three doses being reserved chiefly for those cases in which for any reason it would be injudicious to use chloroform or ether.

"But in my own work I am using it for practically all major operations. The narcosis is entirely too profound for minor surgery (though the supplemental one-dose method works well), and I am sure that others who try it carefully, in appropriate cases will become as enthusiastic as I am, on account of (a) its simplicity, (b) its freedom from post-operative nausea and pain, (c) its economy, and (d) its attractiveness to patients who so greatly dread either chloroform or ether."

DISCUSSION.

A. H. Perfect.—I have used H.M.C. in sixty cases, and do not advocate its use generally as an anesthetic. In obstetrical cases it makes the conditions favorable, but one always gets a blue baby. The ideal anesthetic in these cases is the old reliable chloroform. Surgical cases are "punk" breathers when the necessary chloroform is given, because I do not regard it either as a complete or general anesthetic, and patients must be put asleep by some other means. It has some advantages in quieting nervousness in selected cases but will never take the place of the usual anesthetics.

F. J. Old, Port Colborne.—Use H.M.C. very cautiously; use only to extent of loss of memory in obstetric cases; use only chemically pure hyoscine, not an adulterated solution of hyoscine and atropine, namely scopolamine; use only as preliminary in surgical cases; advisable to use only small amount of chloroform necessary for operative procedure.

Dr. Hicks, Port Dover.—Has used H.M.C. tablets in thirty cases. In obstetric cases it is useful in cases of rigid cervix, but I have had trouble in nearly all cases with a suppression of the milk, and have been forced to bottle feeding of the baby. In medical cases such as gall-stones it is useful. In surgical cases it is well to consider well the condition of the kidneys and the effect on respirations which fall to 14 or 12 or 10.

Dr. G. A. Bingham.—I have tested stovaine in all sorts of operations—abdominal sections, resection of articulation, etc., and in all cases found it entirely successful. The first case was one of resection of bowels and end-to-end anastomosis and was quite satisfactory.

H. H. Sinclair.—My experience is one fatal case for a very simple laparotomy.

Dr. Dunton.—The cyanosis complained of by Dr. Perfect apparently comes from giving too much of the drugs, or from giving it too near the termination of labor. Dr. Olmstead's note of warning against using these tablets indiscriminately applies to all anesthetics, for the utmost care is needed in every case. With such care good results can be had with both methods.

Dr. Duncan Anderson.—Used scopolamine-morphine anesthesia in twenty-five cases. Heart in some cases became rapid some days afterwards. I have used H.M.C. in a few cases, in some of which a delirium developed similar in every respect to that of scopolamine. I believe their chemical effects are the same.

EXSTROPHY OF THE BLADDER: THE PETERS OPERATION.*

F. N. G. STARR, M.B., TORONTO.

Mr. Chairman and Gentlemen:—No Toronto man would think for one moment of approaching the subject of exstrophy of the bladder without first paying some tribute to the genius and skill of the late Dr. George A. Peters. He it was who devised and carried to a successful issue an extraperitoneal method of transplanting the ureters into the rectum, thus furnishing the unfortunate sufferer with a receptacle in which he is able to retain his urine for several hours without inconvenience. I take pleasure in placing the credit where it belongs, notwithstanding the paper of H. Newland Simpson, Adelaide, S. Australia, B.M.J., April, 1906, claiming priority. One has but to read the two accounts to be made aware of who's who. I have followed his method in two recent cases, but before relating them will give a brief resume of the present condition of the cases done by Peters himself.

B. S. G.¹ Male, operated upon at the Hospital for Sick Children on July 15th, 1899, at the age of 5 years. Died about six months ago from an acute Bright's, having suffered for two years previously with ascending, infective pyelitis.

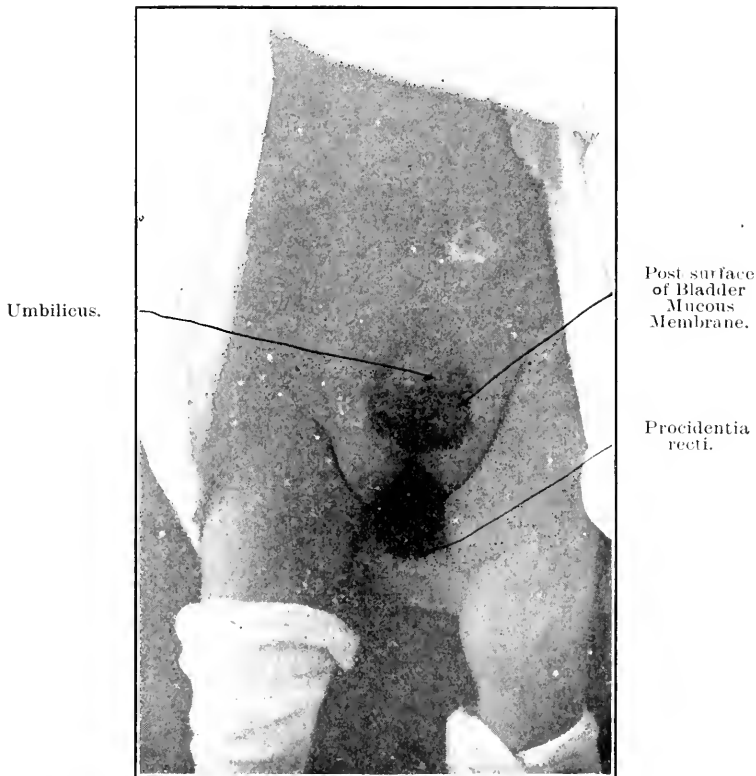
G. R. II.² Male, operation at the General Hospital on October 7th, 1901, at the age of 13 years. He is now a rugged young man of 20 years and is able to do a hard day's work. At the present time he can retain his urine for from three to five hours during the day, and for the whole night unless he is very tired and falls into a profound sleep, when the sphincter relaxes sufficiently to permit of some leakage.

Ada N.³ Female, operation at Hospital for Sick Children on October 26th, 1901, at the age of one year. This case was complicated with a slight procidentia recti, which was cured by Van Bruen's method before the transplantation was attempted. She is now a child of eight years, and at the present time is well, goes to school, and is a bright, cheerful child. She retains the urine for from 3 to 5 hours during the day, though at night there is some leakage.

R. B.⁴ Male, operation at the Hospital for Sick Children on January 24th, 1902, at the age of 4 1-2 years. He died of an ascending infection on the fifth day.

G. R.⁵ Male, came under observation first on March 9th, 1903, suffering from a left inguinal hernia, as well as exstrophy of the bladder. One month later his hernia was operated on at the Hospital for Sick Children, and he was discharged for the time

being. In the following June he came under observation again with a right inguinal hernia and procidentia recti. On November 24th, 1903, the hernia and procidentia were operated upon by the Peters method⁶, and it was not until January, 1905, that Dr. Peters operated to transplant the ureters into the rectum. Two days after the operation there was an escape of urine over the bladder surface, which continued from day to day until on the 4th of February he made an examination under an anaesthetic and found that the rosette of the left ureter in the rectum had become fixed to the



rectal wall. The right one, however, had disappeared, and upon searching for it on the bladder surface the rosette was discovered, and by means of a pair of forceps passed through the rectum and through the original opening in its wall, this rosette was again brought into the rectum and sutured there. From that on there was no escape of urine, and ten days later the openings in the rectal wall appeared to be closed, and the child went on to a complete recovery. When he left the Hospital he was able to retain the urine in the rectum for from 2 to 3 hours.

C. S.⁷ Aged 11, the son of a physician in New York State, came to me in May of last year with exstrophy of the bladder, having been operated upon in New York City unsuccessfully on three occasions. He was admitted to the Hospital for Sick Children on May 11th, was given a general anaesthetic, and I did the Peters operation according to the original description. The rosettes surrounding the ureters were transplanted into the rectum, but not stitched in situ, and the catheters were removed, leaving a large drainage tube in the rectum to carry off the urine. The rectum was irrigated with boracic solution every 4 hours, and the wound in the bladder wall packed with gauze. On the 12th he complained of a great deal of pain in the back. There was no leaking from the wound. On the 14th the rectal tube was removed. On the 15th the rectum would retain the urine for from 2 to 3 hours. On the 16th a case of scarlet fever occurred in an adjoining ward and my patient was removed from the hospital.

From the time of the operation until the time of his removal from the hospital his temperature had ranged from 98 1-5 to 99 4-5. On the day following his removal his temperature rose to 102, and ranged for several days from 100 to 102, and some leakage of urine occurred. Pus also began to flow from the bladder surface, indicating trouble in one of the rosettes.

On the 22nd he returned to the hospital, and on the 23rd I made an examination, but found both rosettes in situ on the rectal wall, and discovered that the leak came from the right side. The leak continued, and as I could not make out a ureteral orifice on the surface of the bladder, I again examined the patient under an anaesthetic, having administered a grain of methylene blue half an hour before the examination. Unfortunately this was not excreted until after the anaesthesia was over. However, the rectum was filled full of sterilized milk, and there was no leak through to the bladder surface. An examination of the rectum showed the left rosette intact and urine coming from it, but the rosette of the right ureter had disappeared, although the end of the ureter could still be seen in the rectal wall, projecting perhaps 1-8 to 1-4 of an inch, the rosette having sloughed off and having allowed enough ureter to be drawn backward to permit of a certain amount of urine escaping in front. The bladder wound was packed tightly with gauze to try to prevent this leak. The following day, however, the pads were stained with methylene blue, showing that there was still a considerable leak.

On the 9th of June the patient was discharged, in good spirits but much emaciated. A letter received from his father a few days ago states that he is in excellent health, and can retain the urine in the rectum for several hours, the leak evidently having ceased from the anterior wall.

Baby O⁸. Female, aged 1 1-2 years, was brought to me the end of January, 1908, suffering from exstrophy of the bladder associated with a large procidentia recti, Fig. 1. On the 4th of February, in the Hospital for Sick Children, I operated for the cure of the procidentia recti by infolding the rectum with six fine silk sutures, leaving the ends long, and then tying these to the parietal peritoneum in the left iliac region, the upper two sutures being used to close the opening into the peritoneum.

From the time the child recovered from the anaesthetic her disposition seemed to be entirely changed; from being fretful and cross most of the time, she became angelic. There was no sign of recurrence of the procidentia, and her general condition had improved so much that on the 27th of February I decided to transplant the ureters into the rectum, after the method of Peters, and this was done. I took care to leave a very large rosette at the end of each ureter, and when these were dissected out they retained a normal pink color, and one could see minute vessels ramifying along the course of the ureter itself. I then transplanted these into the rectal wall, making sure that there was no tension on them, packed the wound in the bladder surface with gauze, and returned the baby to her ward. She came out of the anaesthetic in a short time, was comfortable and happy, and took her nourishment well all that day and the next until about 5.00 p.m., when she suddenly became ill, and, upon examination by the nurse, the child was found to be pulseless and the temperature sub-normal. Stimulants were administered, but she died in about three-quarters of an hour. As an autopsy was not allowed it was impossible to discover the cause of death, but I am suspicious of pulmonary embolism. I think, probably, if one had been satisfied to return the baby to her home with the procidentia cured, and had given her 3 to 6 months to recuperate, that the ultimate result of the operation of transplantation would have been different. The operation was not a difficult one in this child and was done quickly, but she did not behave well under the anaesthetic at this second operation. It seems to me that it would be safer to wait until a child is two or three years of age before undertaking the operation. The probability is that then our results will be more uniformly good and the mortality lower.

Jelinek, in a recent communication to me, tells me that he has collected reports of 140 of these cases done by the Peters method, but that there has been a high mortality, and adds that, with the addition of Peters' own cases, recently sent him, the mortality is greatly improved.

The technique of the Peters operation, described by himself, is as follows:⁹ "On July 15th, 1899, the patient was anaesthetised, and the parts were disinfected as thoroughly as possible. The sphincter was well stretched, and the rectum, having been pre-

viously cleared by a purge and enema, was washed out with an antiseptic solution of non-poisonous strength. A fair-sized sponge, to which a tape was attached, was then passed into the rectum as high up as possible. This not only prevented any passage of faecal matter, but assisted materially in raising the anterior wall of the rectum towards the bladder. Turning now to the bladder, a Jacques soft rubber catheter, about No. 5 (English), was passed for about 2 inches into each ureter. The part containing the eye was cut off, so that the urine entered the opening upon the end of the catheter freely. A silk suture was then "caught" through the extreme end of the ureteral papilla once or twice, and was also passed by a needle through the substance of the catheter, so as to effectually prevent its slipping out, as it was the intention to retain these catheters in position at least 48 hours. Care was observed not to obstruct the lumen by passing the thread across it or by tying too tightly. The distal end of the ureter, with a goodly rosette of bladder muscle and mucous membrane, was then dissected free, the catheter affording an excellent guide to its position. The idea was that whatever virtue there might be in the peculiar termination of the ureter upon the inner surface of the bladder should be retained when the transplantation was completed. As soon as the entire thickness of the bladder wall (which is here uncovered by peritoneum) has been snipped through with scissors or scalpel, blunt dissection may be employed, and it will be found not to be difficult to free the lower end of the ureter along the wall of the pelvis without injury to the peritoneum.

Both ureters having been isolated, the whole of the bladder tissue was remorselessly ablated, from the perimeter, where it merged into the skin, to the prostate, where the vesiculae seminales debouched. (During this dissection great care must be taken not to expose or injure the peritoneum; and if its hazardous proximity be suspected, a portion of the bladder muscle may be left, though every vestige of its mucous membrane must be removed. In my case the peritoneum gave no trouble whatever, and was never in the least jeopardized.)

The next step was to expose the lateral aspects of the rectum at a point below the reflection of the peritoneum. The deep dissection was found to be surprisingly easy, and by pressing back the retro-vesical cellular tissue I was able to expose the anterior and lateral walls of the rectum with readiness. This part of the operation was greatly facilitated by an assistant, who inserted his finger into the rectum and lifted it into the wound.

The final step of the operation was the implantation of the ureters into the lateral walls of the rectum, and this was accomplished in the following manner:

With his finger in the rectum the operator carefully determines

the exact point at which the implantation is to be made. The requisite qualifications are: (1) It must be above the internal sphincter; (2) it must be in the lateral and not in the anterior wall, so as to avoid kinking (this actually occurred in the first instance in the author's case, necessitating a subsequent adjustment of the implantation); (3) it must be high enough up to permit the ureter to project slightly—say 1-4 to 1-2 inch—into the lumen of the bowel without stretching. If the ureter thus projects it forms a papilla, which, when pressed upon from within the bowel, becomes converted into a valve, similar to that at the entrance to the bile duct and the salivary ducts. This point having been decided upon, the operator or his assistant passes a slender forceps through the anus, presses them against it from the rectal aspect, and lifts it carefully into the anterior wound. The wall of the bowel is now excised upon the projecting forceps, which are then forced gently through. By stretching and cutting the wound is enlarged with great exactness, so that the ureter, with its contained catheter, will actually fill it, and yet not be injuriously pressed upon. The forceps are now opened, made to grasp the distal end of the catheter, and withdrawn into the bowel and out of the anus, the operator at the same time carefully directing the ureter through the slit, and satisfying himself that its termination forms a papilla at least 1-4 inch long upon the rectal mucous surface. In guiding the mouth of the ureter through the slit in the rectal wall forceps may be passed back again beside the catheter, and made to grasp the edge of the rosette of bladder tissue around the ureteral papilla. This process is repeated upon the other side. The sponge plug is now withdrawn, care being taken not to disturb the catheters while doing so.

There seems to be no necessity whatever for stitching the ureters in position, and in my case the attempt was not made. The catheters are left in position at least two or three days, or until they come away of themselves, which occurred in my case in about sixty hours.

The Dressing.—I do not think it judicious to attempt any plastic operation for immediate closure of the abdominal wound. The whole area to be healed will be found surprisingly small, and a moderately firm packing with iodoform gauze will afford efficient drainage, and at the same time furnish a support and splint to the delicate ureters in their new position. When the implantation has healed securely, and granulation has been established, a plastic closure may be done if it be deemed advisable. I allowed my case to heal entirely by granulation, and the scar is quite small and firm."

Harry M. Sherman¹⁰, of San Francisco, reported a successful case by the Peters method.

In his last operation, that of G. R., and with the memory of the case of R. B. in his mind, he did not use the catheters as guides even, but grasped the mucous membrane above the openings of the ureters and then made a transverse incision three-quarters of an inch below the entire posterior bladder wall, dissecting up behind the ureter, first on one side and then on the other. The bladder wall between the ureters was then divided, leaving a large, well-nourished rosette attached to each ureter. Into each rosette a chromic catgut stitch was inserted, and then the rosettes were brought into the rectum in the usual way, and the ends of the catgut suture carried through the mucous lining of the bowel only, and tied. No catheter was used to drain away the urine, but a large-sized drainage tube was left in the rectum.

The absence of the anterior wall of the bladder is such a terrible condition, both to the child and to the parents, that it seems to me that any operation that will make for a betterment of a lack of development that we cannot overcome, is an operation in the right direction, and I would close by saying: All honor to the man whose mechanical ingenuity led him to devise this extra-peritoneal method, and who had the surgical skill to lead us along a safe path for its successful accomplishment.

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LARYNGOLOGY AND RHINOLOGY IN RELATION TO GENERAL MEDICINE.

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IN discussing a topic such as this, I fear I will be unable to add anything new to the sum-total of our knowledge of the subject, but my excuse for taking up your attention for a short time is that we are very prone to forget some simple physiological or etiological facts concerning our special organs. He who treats any organ as if it were a thing existing alone, and not as a part of a great and complex system, has not a sound idea of the natural history of disease. Some are prone to see nearly all the ills of their generation as arising in that locality in which they are entirely interested, while on the other hand, there are others, whose number is decreasing all the time, who fail to grasp the importance of looking to distant organs for signs and causes of some general disease. Somewhere between these two extremes will be found the successful specialist and general practitioner.

The subject may be considered in its relation to various systems of which I will first take up the Respiratory System.

Diseases of the lungs may owe their origin to direct extension of disease of the upper air-passages to the Trachea and Bronchi. The nose, which is the gateway to the lungs, is charged with the following duties in preparing the air for its entrance to the lungs:

- (1) Removal of foreign substances as much as possible.
- (2) Warming the air.
- (3) Imparting to the air the requisite degree of moisture.
- (4) A subordinate function consists in protecting the organism by means of the sense of smell and nasal reflexes. Unless nasal respiration is normal we find almost invariably some disturbances in the upper respiratory tract, the most common of which are the various types of laryngo-trachitis and chronic bronchial affections. Owing to the lowered resistance of the bronchial mucous membrane, acute diseases are much more liable to occur. Furthermore, disturbances of the sensibility and of the reflex activity of the pharynx and larynx have an important bearing on the lungs and bronchi, as they facilitate the development of inhalation pneumonia.

The relationship between suppuration conditions in the nose and naso-pharynx, and acute and chronic bronchial affections has

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not had the attention it deserves. One must not forget that in cases of chronic lung disease with tenacious irritating secretion there very often arises a chronic laryngeal and pharyngeal catarrh, the intensity of which is in direct proportion to the amount and consistency of the expectorated material, and to the amount of effort required to effect its expulsion—example, asthmatic, emphysematous and tuberculous with cavities. Laryngeal ulceration is seen in typhoid, cronous pneumonia and pulmonary tuberculosis and laryngeal paralysis, in central nervous disease, aneurism, apical disease of the lung, chronic induration, pleuritis and disease of the bronchial lymph glands. Then again, not only may one have paralysis of the recurrent laryngeal nerve, from pressure of an enlarged thymus, but compression of the trachea may occur in cases of mediastinal tumors.

One could hardly discuss the nose and throat in relation to general medicine without saying something regarding that common complaint—cough. It is essentially a reflex movement, necessarily associated with some irritation of the sensory fibres of the pneumogastric. The impulse created by this irritation being transmitted to the ganglia, is referred back to the trachea, bronchial tube, through the motor filament of the same nerve. Ear cough is not by any means rare,—clearing the ear of wax has cured many a chronic cough. Cough may be due to local or systemic conditions. Among the nose and throat conditions which cough may be found are granular pharyngitis, pharyngeal ulceration, lateral and central, nasal neoplasms and irregularities, enlarged tonsils, pharyngeal naso-pharyngeal, or lingual, elongated uvula, chondritis and perichonditis of the larynx, specific and tubercular granulations and ulcerations. Boys at the age of puberty have not infrequently a laryngeal congestion, which, while innocent enough, may produce considerable cough.

One author, whose name I have forgotten, speaks of a cow or goose-like cough in persons with aneurism of the arch of the aorta. This is almost a sure diagnostic sign. The so-called night cough may be due to mechanical conditions, or brought about by obstruction to nasal breathing and enforced mouth breathing. Stork's inflamed areas are blocked-up glands of mucous membrane, and the small inflamed area, acts as an exciting factor.

I do not intend entering into any discussion on the question of the nasal origin of asthma. Many writers after drawing rather hasty conclusions tell of the numerous cases of cures through some nasal operation. My own experience is decidedly against this view, and this is also the experience of the London Laryngological Society, who discussed the question at very great length, and whose conclusions were published.

Diseases of the Circulatory System.—Hemorrhages from the

mucous membranes of the upper respiratory air passages constitute a frequent concomitant of cardiac disease without compensation, and occur also in consequence of the rise of arterial pressure when compensation exists; they are most common with venous stasis, due to failure of compensation in mitral disease, and in aortic insufficiency. Nasal hemorrhage, in elderly people, may be the starting point to a diagnosis of granular kidney or a general artero-sclerosis or blood dyscrasia. Hemorrhage in the pharynx and larynx are rare, and are generally found in chronically engorged mucous membrane or varix of the lingual tonsil. A condition of very great pharyngeal venous stasis has been observed in cases of pernicious anaemia. The congestion catarrh of the nose pharynx and larynx seen in chronic heart disease must not fail to be recognized, as it materially affects the treatment. Topical applications fail or do harm without constitutional treatment, nor should that type of granular pharyngitis, seen in young anaemic girls, be expected to respond to local applications. Such treatment is not indicated, but a course of Bland's pill certainly is. Oedema of the larynx may be due to venous stasis in old laryngeal inflammation, or to a general oedema in uncompensate heart disease. Not long since I saw a patient, a boy twelve years of age, with very marked laryngeal oedema, due to chronic nephritis. Aneurism of the arch of the aorta may be first suspected when a laryngoscopic examination is made to account for some hoarseness. The hoarseness when complete is typical of complete paralysis of all the muscles supplied by the inferior laryngeal nerve, the adductors as well as the abductors. This is quite different from the other form of paralysis of the recurrent, which affects only the cricoa aryteriodius posticus, and exerts but little influence on either phonation or respiration. It represents the early stage of paralysis, and may be present when the aorta dilation is only beginning, and before any clinical symptoms have made their appearance. As no functional disturbance is here produced, it is only discovered accidentally. Laryngospastic attacks, and periodic palsies of the cords, may also occur in aneurismal disease, as well as pulsating movements, extending to the larynx, tracheal stenosis by pressure, pressure ulcers and perforations. A pericardial exudate may produce paralysis of the left recurrent, if the exudate is very abundant and distends the pericardium as far as the jugular notch, the engorgement of the veins that meet at that point may exert direct or indirect pressure on the right recurrent. Palpitation of the heart is one of the reflex neuroses, due to irritation in the nose. It occurs in chronic rhinitis with hypertrophy and polypus formation. Functional aphonia partial or complete, may be due entirely to anaemia. As an expression of hemorrhagic diathesis one might mention the

epistaxis seen in leukemia. In this dyscrasia we also sometimes find lymphoid nodules and infiltrations, with secondary necrosis and ulceration in the pharynx and larynx. Hypertrophy of the palate and tonsils may be an early sign of leukemia. In the hemorrhagic diathesis, hemophilia purpura, and scorbutic, the same processes are found in the mucous membrane as in the skin.

Digestive System.—The intimate relationship between the nose and throat and the digestive tract has, no doubt, been appreciated by all of you. A chronic dyspeptic condition may result from constant swallowing of post-nasal discharge, whether from nasopharyngeal disease or from sinus suppuration. On the other hand, chronic rhinitis and chronic naso-pharyngitis often depend for the chronicity to faults in eating and digestion. Chronic conditions of the mucous membrane of the pharynx are very often benefited by a liver stimulant or intestinal disinfectant. Blue pill and Apenta water are often of more value than all the sprays and pigments one could use.

Acute and Chronic Infectious Diseases.—It would make my paper far too prolific were I to attempt the description of the various inflammatory conditions of mucous membranes in the exanthemata. I would remind you however that in all acute coryzas in children, that this may be but the early manifestation of either measles (in which Colpeck's spots should be sought) or some ptomainic intestinal absorption. A very severe rhinitis with marked constitutional disturbance, with or without albuminuria, should excite the suspicion of latent diphtheria.

Acute rheumatism and even acute nephritis are now by many good authorities supposed to have their initial infection through the tonsils, hence in pericarditis one should not forget that the infection may have arisen from decomposition of the lacunar detriti. We may have a laryngitis with ulceration even to necrotic perichondritis in typhoid fever. In influenza, while the points of entrance of the infection is through the mucous membrane of the nose and throat, the evidence of the disease ends there, to come forth to all its grave manifestation in the heart, nerve, kidneys or pulmonary system. Even types of influenzal enteritis are not uncommon. The nose bears later evidence of the poison in the injection of the mucous membrane of the various accessory sinuses. In fact, influenza causes by far the majority of cases of acute and chronic sinusitis, parosmia and anosmia and a peripheral neuritis of the nerves of the pharynx and larynx are of frequent occurrence. Under the head of infectious diseases we must mention rheumatoid arthritis. It is not clear just what the pathology of the disease is, but it is agreed that the two portals probably most concerned with the entrance of the disease, are the intestinal tract and the tonsils. Erysipelas is, as you all know, not infrequently begun by a small

abrasion in the nasal vestibule. I have seen it spread from there to even an acute oedema of the larynx. I do not intend entering into any discussion on the points relating to the entrance of tuberculosis in the system. In the larynx it is of fairly common occurrence, but never primary. One may find it in the larynx before he is able to discover it in the lungs, but Jobson Horne has proved by dead house work extending over many years that the larynx is always secondarily involved. The association of enlarged cervical glands and diseased, though not necessarily enlarged tonsils, is familiar to you all.

Acute leukemia often begins with symptoms of tonsillitis; often the exudate, which may be mistaken for diphtheria or Ludwig's Angina Pseudo-leukemia, may follow at some point if local irritation, or follow a chronic nasal catarrh. Epistaxis may be the initial symptom of leucocythemia. It might surprise some of you to know that the first infection of leprosy is to be found in the nose, and that the nasal secretion of lepers constitutes the most important factor in the spread of the disease.

Selected Articles.

ARRANGEMENT AND OCCLUSION OF ARTIFICIAL TEETH.

BY J. H. PROTHERO, D.D.S., CHICAGO, ILLINOIS.

STUDIES of the movements of the mandible in mastication have established certain facts that are of vital importance to the prosthodontist in the construction of artificial dentures. Many in the profession to-day are familiar with these facts, but fail to profit by or put them to practical use. Others, again, have given this subject but little consideration, principally because its importance and value have never been impressed upon their minds.

Bonwill labored long and earnestly with the profession in encouraging the study of normal occlusion of the natural teeth, and urging the necessity of following nature's methods in the arrangement of artificial teeth. He was a pioneer in this field, and practically worked alone without the sympathy or assistance of any one for many years; therefore, it is not strange that he should have failed to complete the system in all of its details, nor is it strange that he made some erroneous deductions. The bulk of his work, however, stands as a monument to his memory, which compensates in a small degree for the lack of appreciation of his efforts by the profession while he was living.

I have brought with me a skull in which the full complement of the teeth is present, and which I hope to exhibit at your clinic. One need but glance at it to appreciate the beauty and utility of arrangement of the organs of mastication. A close study of this particular specimen will, I am sure, inspire in the minds of those who examine it a desire for greater light, and prove an incentive to higher, larger and broader efforts in the field of prosthesis. From its examination one can also readily understand why Bonwill, who examined thousands of such specimens in his research work, became the enthusiast that he was.

Within the last decade a few men have taken up the work where Bonwill laid it down, with the result that more accurate occluding frames have been devised, appliances for recording the normal movement of the mandible have been invented, and new terms and expressive phrases have been introduced for simplifying the study and carrying out more accurately the practical details of this subject.

The lower jaw, on account of its peculiar attachment to the base

of the cranium, and of the direction traversed by the muscles controlling it, is capable of a great variety of movements. Mastication, however, is accomplished by the jaw movements being carried out along certain definite lines. There is no haphazard "catch-as-catch-can" condition prevailing. Every movement is for a purpose and is carried out with almost mathematical precision.

MOVEMENTS OF THE LOWER JAW IN MASTICATION.

The facts I wish to present will be rendered clearer by giving a brief description of the movements of the lower jaw in the act of masticating food on one side of the mouth. We will suppose the food has been introduced into the mouth and carried between the upper and lower teeth on the left side by the tongue. The right side of the mandible is then drawn forward and downward a short distance, the condyle passing onto the eminentia articularis, and following what is known as the "condyle path," while the other condyle is slightly rotated, but remains practically at rest in the glenoid fossa, thus becoming the pivotal point around which the mandible rotates. This movement brings the marginal ridges of the buccal cusps of the lower bicuspid and molars on the pivotal or working side of the mouth, in alignment with the buccal cusps and marginal ridges of the corresponding upper teeth, while their lingual marginal ridges occupy a similar relation to the corresponding upper teeth and surfaces. The distance traversed by the buccal marginal ridges of the lower teeth in passing from normal occlusion in the central grooves to the buccal marginal ridges of the uppers in partial occlusion is most expressively termed the "differential" by Dr. T. W. Pritchett.

This differential movement brings the teeth in such relation as to form a long rectangular groove extending from the third molars to the first bicuspid, into which the food is forced and prevented from lateral displacement by the tongue and cheek muscles. On the opposite or projected side the buccal cusps of the lower third molar engage with the lingual cusps of the upper second or third molar, and sometimes both, depending upon the mesio-distal relationship of the teeth in the two arches. Anterior to this contact, the other molars and bicuspid are not in occlusion, and consequently are not in correct relation to masticate food. The lower incisors are usually in contact with the upper incisors between the central and cuspid on the working side of the mouth.

It will therefore be seen that contact of the lower with the upper teeth is secured at three widely divergent points, triangularly located, and hence the term, three-point contact, has been applied to both natural teeth and artificial substitutes exhibiting such contact. This term expresses a condition that should be present in either natural or artificial dentures in order to insure the most

effective results in mastication, and prevent the tipping of dentures and the jaw under stress. Under normal conditions, the simple opening and closing, or hingelike movement, is only employed when lateral motion is not possible, or when food of the softest variety is being triturated and is not nearly so effective as the lateral movement.

When the upper anterior teeth over-bite the lowers, the bicuspid and molars are arranged so that their general occlusal surfaces present a curved line, with convexity downward, more or less prominent, depending on the depth of over-bite. This line if projected backward passes just anterior to or through the condyle. The center of this curve lies in the region of the upper anterior margin of the orbit under normal conditions, and correspondingly higher as the arrangement approaches a plane. This curve has been called the "compensating curve," or "curve of Spee," so named from the man who first described it. The inclination downward and forward of the condyle path coincides with this curve and varies from a horizontal plane to an angle of 45 degrees, the average being about 25 degrees.

Occasionally in the same individual there is a difference in the angles of inclination taken by each condyle. This curved arrangement is a provision of nature to preserve contact of the teeth at various points in the arches, by compensating for the dropping down of the condylar processes as they move forward on the eminencia articularis. The lower third molars, which are placed in a higher position in the curve, when brought forward come in contact with the upper second molars, which are placed correspondingly lower. At the same time the incisal edges of the lower anterior teeth are carried downward and forward, and usually come in contact with the corresponding upper teeth and surfaces, although contact in this location is not an absolute necessity, thus equalizing the force exerted by the muscles of mastication and enabling them to exert their maximum effort.

Many other interesting and important facts relating to normal occlusion and mastication might appropriately be mentioned in an essay of this character, but time forbids.

DETAILS TO BE OBSERVED IN ARRANGING ARTIFICIAL TEETH.

An effort will now be made to describe a few of the many important details to be observed in arranging artificial teeth as near to nature's methods as possible.

The mission of the prosthetist in replacing the lost natural teeth by artificial means is two-fold: first, to restore the function of mastication, and second, to meet æsthetic requirements. In order to arrange and occlude artificial teeth correctly an occluding frame must be used which is capable of reproducing the masticatory

movements of the human jaw. A number of good appliances fulfilling such requirements more or less accurately are now procurable, some of which are decided improvements on the Bonwill. The second adjunct is an appliance for measuring the relation of the alveolar planes to the condyles, while the bite plates are in position in the mouth and of sustaining them in this relation to the hinge of the occluding frame while the models are being fixed. The face bow fulfills these requirements efficiently. Some means of registering the inclination of the condyle path is also necessary. A method outlined by Christiansen and an appliance suggested by Dr. Snow can be applied with fairly satisfactory results for accomplishing this step.

The proper appliances at hand, the steps of construction of a full upper and lower denture are as follows:

The models having been secured, a rigid unyielding baseplate is conformed to each and trimmed to correct peripheral outline. Borders of wax are built up to correspond in length to the natural teeth and absorbed tissue. This can only be done approximately at this time. The wax rims should be trimmed nearly flat occlusally, the outer buccal margins of the lower being slightly higher than the lingual to correspond with the bucco-lingual inclination of the occlusal surfaces of the teeth, while the upper rims are trimmed correspondingly. The labial and buccal surfaces of the wax rims should be built out to represent such restoration as may be deemed necessary. When this has been accomplished the base-plates are introduced into the mouth. The length of the upper rim of wax is determined by the length and position of the lip and should show about 1 1-2 millimeters below the lip when the latter is at rest and facial contour restored. The length or height of the lower wax rim is determined after the length of the upper rim has been secured by noting the position of the lower lip when closed, and the external orbicular contour. Too long a rim is indicated by the effort on the part of the patient necessary to obtain contact of the lower with the upper lip. A rim deficient in height is indicated by the lower lip being crowded down, and consequently shortened, resulting in a disturbance of the general facial contour.

If absorption of tissue in both upper and lower arch has been uniform, the line of contact of the two rims should be about midway between the upper and lower borders. Where but slight absorption has occurred the wax rims will represent a thickness but little greater than the length of the crowns of the natural teeth. The facial contour should be noted and wax added to or trimmed from the rims as æsthetic conditions indicate. Usually, it is necessary to build out the cuspid eminence to a considerable extent in order to obliterate the wrinkle which extends from the alæ of

the nose over the angle of the mouth in those cases where loss of tissue is marked.

Care should be taken to see that uniform contact of the wax rims throughout is secured while the base-plates rest solidly upon their respective borders. This is tested by having the patient close the mouth firmly; then, with a thin, flat instrument inserted between the rims in the region of the second bicuspid or first molar, attempt to pry them apart. If they do not yield at this point, repeat the step on the opposite side.

Should the base-plates separate on either side, the other side remaining in contact, or on both sides while contact is maintained in the anterior portion, more wax should be added to the deficient rim until uniform contact is secured anteriorly and on both sides at the same time. Failure to correct this error would result in the teeth on the deficient side failing to occlude.

The high lip line should be marked, which will give some idea as to the length of tooth to use to avoid the exposure of a large area of artificial gum material, and yet allow a reasonable amount to show in laughing. The median line should be marked on the base-plates at this time. One of the best methods of doing this is to place a straight edge along the median line of the face, striking an average between the point of the chin, the philtrum, and a point midway between the inner termination of the eyebrows. The result will be harmonious, and as a general rule more accurate than if the frenum labae is taken as a guide.

The upper base-plate is now removed and the stem of the face-bow heated and forced into the wax rim two or three millimeters from the incisal plane. Having been forced deeply into the wax, it can be removed to facilitate the carrying out of subsequent steps and replaced in position later when the base-plate is *in situ*.

The next step is to secure the correct or normal relation of the lower to the upper jaw. The method about to be described has been followed by the writer for a number of years with uniformly accurate results.

METHOD OF SECURING CORRECT RELATION OF UPPER AND LOWER JAW.

Both base-plates being in position, the patient is instructed to relax the muscles of the jaw so that the operator may open and close the mandible at will. The tips of the fingers are then placed on the point of the chin, moderate but not excessive pressure upward and backward exerted, and the mouth opened and closed several times, pressure as indicated being maintained at all times. The fingers of the other hand are employed to hold the lips apart and careful attention given to striking of the wax rims together. It will frequently be noticed that they do not at first strike uniformly in the same place, but after a number of trials with

maintained pressure on the point of the chin, the correct position will be found. Excessive pressure on the chin will compress the tissues in the glenoid fossa and result in backward displacement of the mandible.

When the normal closure is established, the base-plates being in contact and pressure being still exerted on the chin, the patient is instructed to "keep the lower jaw closed." This is readily done without any tendency to disturb the secured relation. Two four-pointed staples should be at hand, which can now be forced into the wax rims to hold the base-plates firmly together. The stem of the face bow is now inserted into the upper base-plate in the opening previously made for it, care being taken to see that it is firmly imbedded in the wax and immovable. The face bow is then placed in position, the centre clamp passing over the stem projecting from the base-plate, and the side rods carried to a point about 12 mm. in front of the external opening of the ears, and on a horizontal plane with it. They are then pressed firmly against the sides of the face and the clamp nuts tightened. Care should be taken to see that the face bow is evenly balanced before tightening the clamp nuts. This can be done by slipping the bow sideways on the rods, as indications require, until the same number of graduations show on each rod between the face bow and face.

The clamp nut on the stem is next tightened firmly, when the base-plates are ready for removal. This is accomplished by loosening the side clamp nuts and drawing out the rods. The patient is then instructed to open the mouth, and the base-plates are removed by grasping the rods attached to the upper plate. Reasonable care should be observed to prevent the relationship of the two base-plates and that of the face bow with the upper plate from being disturbed.

MOUNTING THE MODELS.

Mounting the models on the occluding frame is the next step. The side rods of the face bow are pushed inward to their limit, and the clamp nuts tightened. This brings their inner ends, in which there is a slight depression, in proper relation to receive the projecting lugs of the frame hinge. The upper bow of the frame is thrown open, the face bow adjusted in position, the upper model placed in position in its base-plate, and the bow dropped back to position again. It might be well to secure the model to the base-plate with a little hot wax to insure stability while being attached to the frame. Plaster is now mixed and applied to the model, and around the bow as usual, to hold it in place.

The entire frame, with face bow, base-plates, and upper model, is now inverted, the lower bow of the frame thrown back, the lower model placed in position in its base-plate, the bow dropped down upon it, and the model attached as usual. When the plaster is

firmly set, the face bow can be removed from the frame and base-plates.

The models now occupy such a position upon the occluding frame that their occlusal planes bear the same relation to the hinge that the natural alveolar planes bear to the condyles. This relation is not procurable in any other way known to the writer than by means of the face bow mentioned.

REGISTERING THE INCLINATION OF THE CONDYLE PATH.

One other step of importance remains to be carried out before proceeding to arrange the teeth. This consists in registering the inclination of the condyle path and setting the hinge slot of the occluding frame at a corresponding inclination. The staples are removed from the base-plates and on either side of the lower base-plate on the occlusal surface, near the distal termination, is placed a small U-shaped appliance having a projecting tapering pin. The "U" portion is pressed into the wax, leaving the pin projecting above the occlusal plane.

The base-plates are now inserted in the mouth and the patient instructed to project the jaw forward and then return it to normal position. This may be done a number of times before final attachment of the two plates, to insure against lateral motion. When the patient can move the mandible evenly forward, he is instructed to close while the jaw is projected. The base-plates, instead of being in normal position, will usually be separated at their distal extremity, relation being maintained by the projecting pins, which have passed upward into the opposite base-plate. The lower plate will also be considerably advanced beyond the upper. The incisal rims of wax, however, should be in contact.

On removal, the base-plates are returned to the lower model on the frame, the hubs of the hinge slots released, and the spring controlling the lateral movement of the frame thrown off its attachment. This releases the upper portion of the frame so that the upper model can be moved up or down, forward, backward, or sideways without restriction. It may now be placed in the upper base-plate, and its correct position found. This adjustment, it will be found, will cause the hinge slots to assume approximately the same angle or inclination or the condyle path, in which position they are permanently fixed by tightening their respective clamp nuts. The base-plates are separated, the U-shaped appliances removed, and the hinge spring thrown into action, which brings the base-plates back to their original relation as when first mounted on the frame. As before stated, however, when lateral motion is produced, the lower bow of the frame is carried downward and forward at approximately the same inclination as that of the natural jaw.

The frame should now be subjected to the lateral motion and

the occlusal planes of the wax rims modified so as to remain in contact in the lateral motion, as well as in normal occlusion. This modification, it will be found, will usually necessitate the curving upward of the occlusal planes, the amount of curvature depending on the angular inclination of the condyle path.

SELECTION AND GRINDING OF TEETH.

Teeth of good form appropriate to the requirements of the patient should be selected. The molars and bicuspid should be as nearly normal in their bucco-lingual diameter as is possible, to secure a good working differential in mastication.

The principal object in the grinding of the teeth, and which should never be lost sight of, is to so modify their occlusal forms as to increase the contact area of those surfaces involved in mastication to the greatest possible extent. In other words, it is the developing of surfaces from what would otherwise be mere contact points in the teeth as supplied by the manufacturers.

With a little experience and skill, the development of correct occlusal areas on bicuspid and molars can be accomplished without marring appreciably their general outline form, thus rendering them capable of food reduction with minimum effort.

As a general rule, the central groove should be deepened somewhat and broadened materially. This treatment not only reduces the mesial and distal marginal ridges, which usually are too prominent, but it reduces the lingual inclination of the buccal and the buccal inclination of the lingual cusps, which are too rounded and tubercular in form, to broad planes so necessary for accomplishing the desired results.

The modifications just mentioned may be made before beginning the arrangement of the teeth, and when properly carried out the teeth will need only occasional touches here and there in the final adjustment. These preliminary steps having been carried out, the teeth are ready for arrangement.

ARRANGEMENT OF THE TEETH.

Since the facial contour was restored by carving the labial and buccal surfaces of the wax rims, the teeth should be arranged progressively in such manner as to take their proper alignment without destroying any more of the contoured surfaces than is necessary. A section of wax adjoining the median line on the upper base-plate is removed from the rim, of sufficient length and depth to admit one of the central incisors. This is placed in proper alignment labially and incisally, and firmly attached by melting the wax lingually. Another section large enough to admit the adjoining lateral is then removed, and this tooth dropped into position, the tooth already fixed and the adjoining margin of the wax to the

distal serving as a guide in securing the correct labial alignment. The cuspid, and then the three opposite anterior teeth, are similarly adjusted, then the bicuspid and molars, the occlusal surfaces of which are arranged to correspond to the compensating curve previously developed in the wax rims.

Two methods are in vogue for arranging the lower teeth. First, the second bicuspid is set in position to occlude with their opposite fellows, the teeth anteriorly and posteriorly being arranged from this fixed point.

The second method, and the one recommended by the writer, is to arrange the six anterior teeth first, allowing the upper incisors to overbite the lowers slightly, and when the first bicuspid is reached, correct the disproportion in width as far as possible between the uppers and lowers by grinding the proximating surfaces of the cuspid and bicuspid. This method usually requires less modification of the anterior teeth than the one first mentioned. As a rule, disproportion in the relative mesio-distal diameters of the lower bicuspid and molars, compared with the uppers, nearly always exists. In such cases the larger teeth should always be reduced by grinding on their mesial or distal surfaces, or exchanged for a set of proper proportion, which, however, can seldom be done with exactness. The mesial and distal planes of the various cusps are modified as conditions require, so as to secure positive contact with the corresponding planes of the opposing teeth.

Beginning with the placing of the first lower tooth, the frame should be moved from side to side to test the correctness of the position of each tooth placed, and modified, or its opponent modified, as conditions require. Further remarks along this line are unnecessary. To those who have never attempted a case of anatomical occlusion, I can say that if you will undertake one with a careful determination to succeed, you will learn more from that one case than can be derived from a paper ten times more explicit than this.

As one gains experience, enthusiasm grows, and a class of procedure shunned by some and a bugbear to many more because of unsatisfactory results, becomes a pleasure.

Let me quote a paragraph from an unpublished paper by Dr. T. W. Pritchett, to whom I owe much for many hints in this field: "There is fascination in the thought when edentulous persons, helpless as to the function their lost organs perform, present for our service, we can, in a measure, by our art restore the lost function and make them presentable to their friends again. The romance comes in when we succeed beyond our and their expectations."

My friend Pritchett succeeds, and so do many more whom I could name, and so can every one who makes the effort. It is the only way. Get into the front rank and help the work along by

doing it yourself and helping the other fellow. If all would put their shoulder to the wheel and follow nature's methods, the plain line articulator and barn door hinge would be relegated to the scrap heap where they should have been cast years ago.

DISCUSSION.

Dr. H. D. Weller, Indianapolis, Ind.: I believe that in the last few years, or in the past years, there has been too little said on prosthetic dentistry; that is, on the making of dentures. There is no doubt in my mind but that Dr. Prothero has gone into this subject in a very scientific way, and there is no reason why, in the State of Indiana, each of us should not go into this subject in the same way, because he has started us out on the right track, and he has given us a very valuable paper this evening.

In the past years I have had a great deal of experience in setting up teeth and in taking "bites," having been connected with the Indiana Dental College for a number of years. Students come to college, and Dr. Byram starts them out as Dr. Prothero has outlined here to-night. The next year they come under my charge, and I try to follow out Dr. Byram's theories, but some of them will say, "Why, Dr. So and So, my preceptor, does not use an anatomical articulator; he uses a plain line articulator; neither does he take a base-plate 'bite'; he takes a biscuit 'bite'; and he does not pay any particular attention to the arrangement of the teeth from an anatomical standpoint."

There are a good many dentists who do not understand these theories, and there are a great many others who say that this method of taking a base-plate "bite" takes too much time. They say they can pick up a hunk of wax, throw it into the patient's mouth and tell him to close on it, and dismiss him in five minutes. The patient goes away, comes back in the course of a week, and they have a full upper and lower done. The chances are that they will have to take a stone and grind each of the teeth in order to get them to articulate half way decent.

Now, it is true, to a certain extent, that it does take some time, but I am sure that when they are finished they will give much better service. Of course, a great many dentists do not get enough money for making teeth, and, therefore, cannot put the time on them, but I believe that every "bite" taken should be a base-plate "bite," and it should be taken as Dr. Prothero has indicated here to-night. It is a very simple matter, after one becomes accustomed to it, to take a "bite" in a reasonable length of time, and to set up the teeth anatomically. It is very little more trouble than if we set them up without having any of those lines, and I hope, gentlemen, that in the future we will all think about the subject of setting up teeth anatomically. I do not believe the manufacturers supply the

Nowhere on God's green earth is there an association of men who do as much for humanity as the dentist; and this truth, though in rather a hazy way, is forcing itself upon an unsympathetic public. Knowing ones are casting aside the Cheap John, advertising quack, who has done so much to hold our profession in (if not actual disrepute) very ordinary standing.

The knowing public is surely finding out that the conscientious, æsthetic dentist must have a place as high in the educated professions as any other.

Now, the paper this evening is not only full of practical suggestions, but contains much that will lead us up to the realization of the beautiful, of the art side of our work. Do you know, I have a belief that a dentist who is not only practical, but a dreamer as well, will not reach the highest plane that is intended for him to attain. Had Dr. Prothero and the many good men of his kind not been dreamers, how could they project themselves into the future and bring to us the many improved methods we have? Dr. Bonwill had a dream, and in that dream he saw his articulator and brought it forth as the first great and distinct improvement in prosthetic dentistry in years. I heard some one the other day speak about clover fields for the dreamer. If you want a real inspiration, go out into the country, climb upon a rail fence to the windward of a forty-acre clover patch, and drink in its wonderful beauty and rich perfume; and as you dream, what is it that places you above the cattle across the brook?—they, too, are enjoying the clover; but do they see its beauty? Do they enjoy its sweet perfume? Then the thought comes to us, shall we be like the cattle in the field or shall we make practical our dreams, and thereby uplift humanity and bring credit upon our profession?

Dr. J. H. Morrison, Connersville, Ind.: I feel that perhaps one of the most valuable features of the paper this evening is the pointing out of some of the results of setting up teeth regardless of or without any sight of the proper occlusion or character of the teeth. I have followed the literature upon this subject some little during the past ten years, and I believe that I can easily say to you that one of the greatest joys that comes to the dental worker comes to him when he is successful in setting up a set of teeth and has attained the results that are possible by the methods outlined in the paper read before you to-night. I do not, by any means, consider those things as matters of theory, and to disregard them is to disregard a practice that is worth your while when pursuing the profession from a practical standpoint. It is the one thing that will save a person more trouble than any other. We used to set up a set of teeth, and if the patient found one spot where she could masticate, we considered that a successful job, and I suspect that many of you have made artificial teeth with which the patient could

dentists with the proper moulds for articulating teeth anatomically, because we have to grind a great many teeth to make them articulate as they should.

I remember a few years ago I called on a friend of mine in a small city. He was at that time articulating a full upper and lower set of teeth. He was swearing at the manufacturers because they were sending out teeth that would not articulate. He told me that he could never make the bicuspid articulate in the right place, and that he could never make the bicuspid hit right. I said to him, "Doctor, if you will permit me, I think I can show you how to avoid that trouble in the future," and I proceeded to articulate the teeth as Dr. Prothero has instructed us here to-night. This man had been in the habit of articulating the upper teeth first; then he would start with the lower central incisors and articulate the incisors and the cuspids. If the first bicuspid came in the right place he was tickled to death; if it didn't he did not know what to do. I suggested that he articulate the first bicuspid first, and then grind the distal surfaces of the cuspid and the mesial surface of the bicuspid. Then, if you have to grind more to make these six anterior teeth articulate, grind them on the mesial and distal surfaces. Now, I do not pretend to be able to set up teeth like Dr. Prothero, but I was able to show this dentist how to get rid of his difficulty.

In the first place, his teeth were too small for the case he had in hand, and right here is a point I wish to impress upon you. A great deal of trouble is caused in setting up teeth by not using the proper judgment in the selection of same. A great many men try to set up teeth that do not anyways near fit the case they have in hand. The cuspids come too near the front of the mouth, and, therefore, the bicuspid does not articulate at the proper point.

Dr. F. R. McClanahan, Rushville, Ind.: Very recently I heard a prominent speaker make the statement that anything in this age that is not practical is worthless. There is evidently much of truth in the assertion, and we see it every day in the profession of which we form a part; and in the very practical paper of the evening we have not sacrificed art and beauty for utility, but, rather, has Dr. Prothero combined the two into perfect completeness.

The work, then, of the prosthetic dentist is to successfully bring together works of art with practical results. I have no sympathy with the dentist who is a blacksmith and nothing more; or, as the *Indianapolis Star* puts it in this morning's issue, "When we get every tooth carpenter into our society," etc.

In looking over my work, I fear I have been about as much the carpenter as the artist, and it really takes years of hard study and many papers and demonstrations like we have had to-night to educate us up to the standard we must finally achieve.

chew only on one side of the mouth, and could do nothing with the other side. The patient did not know the reason for this, nor did we ourselves, but when we study the motions of the mandible we see the reasons for the defects and are able to correct them. A set of teeth articulated properly come together and operate on one side just as well as they do on the other.

Some complain of the manufacturers because the pins are so small, when perhaps the whole trouble is that the teeth were not articulated properly, and were not in the proper position to resist the forces that were to come against them. You may discover something of the fault of teeth in setting porcelain crowns on the anterior teeth. You know what trouble you get into if you make the articulation too strong, and it is the line of this force that we sometimes overlook.

A good many of us look upon these things as a matter of theory only, things which are too difficult to work out, and are not worth our while, so far as practical results are concerned, and this is where we make a great mistake.

I am very glad to have heard this paper, and very glad to know that our society is giving attention to this subject. Dentists used to think that it was beneath their dignity to discuss artificial teeth.

Dr. D. A. House, Indianapolis, Ind.: I believe this is the first time I have asked the privilege of the floor at this meeting. I do not know any other reason for it than the piety of which I am often accused, but a man who can listen to a paper like that and not get up and express his feelings as regards the good he has received from it, shows that his sense of appreciation is very shallow.

The first gentleman discussing the paper made a remark to the effect that the subject of prosthetic dentistry is discussed and written about entirely too little. I very heartily agree with that. I believe if we had a little less of gold crown, crown and bridge-work, a little less of porcelain inlays, and a little less of some of these other things, of which you can use one, two, three or four other things, and a little bit more of the prosthetic side of the work where you have to use one thing, and cannot substitute anything else, I think we would be better off. I have made quite a few artificial dentures; I have made very few that I can positively say I feel proud of; I have made a number that have worked with reasonable success, but I believe I can go to my office to-morrow and make a better denture than I ever made before.

Dr. J. Q. Byram, Indianapolis, Ind.: Those of you who have had the misfortune to listen to my melodious voice within the last eight or nine years know that I have said a great deal upon the subject of the arrangement of artificial teeth. I have contended ever since I made a study of this subject that the dentists who rely upon the plain line articulator for the arrangement of artificial teeth do

not comprehend the laws of occlusion. I grant you, Mr. President, that a number of dentists of good reputation, and dentists who are skilful in the arrangement of artificial teeth, use the plain line articulator. But the question is, do they do as good work as they could do if they would change and use the anatomical articulator? If the results obtained by the use of the plain line articulator appear satisfactory to a dentist who has never used an anatomical articulator, let him use the anatomical articulator, and I am quite sure he will be much more gratified by the results obtained.

The first point in Dr. Prothero's paper to which I wish to call your attention is the manner in which he looks out for details. If there is any work which necessitates caring for the minute points, it is in the arranging of artificial teeth. I do not doubt but that a number of you, when he showed the slide on the screen, where he cut out in the wax to arrange one central incisor, and then the other central, then the lateral, and so on, thought, "That is all foolishness; why not cut off enough in that wax at one time for all of those teeth, instead of bothering with each tooth separately?" I wish to say that we as dentists get into the habit of hurrying our work. Let us bear in mind that in the arrangement of artificial teeth we are working in a negative way. The sculptor selects his model; the landscape artist studies the landscape before he begins to paint; and unless we can get an exact model—if you please to call it a model—of those teeth, I believe that the majority of us cannot give to our patients the best arrangement, and I wish to lay particular stress upon that point. It is time lost, and it is not all foolishness to care for the minutest detail.

The next point to which I wish to call your attention is this: that he who saves time in the beginning of the operation by using a simpler form of "bite," if you please to term it that, usually loses time at the end of the operation when he grinds the teeth to occlusion. And does he give his patients as good service? After all, I believe that the total amount of time consumed in the arrangement of the teeth with an anatomical articulator, and the use of the base-plate "bite" is but little, if any, greater than the time consumed in the arrangement of the teeth with a plain line articulator.

Another point to which I wish to call your attention, and one which Dr. Prothero only mentioned indirectly, but I think he will bear me out in it when I say it is almost impossible to get a mechanical device in the way of an occluding frame that is an absolute imitation of the natural jaw. The idea is to get one with which we can as nearly as possible imitate the movements of the jaw, and then do the final arranging in the mouth, but I believe I am safe in saying that he would not have you believe that he relies upon the articulator altogether, but does the final arranging of the teeth in the mouth, and that, it seems to me, is a point overlooked. The method

of obtaining the condyle path, it seems to me, is a very valuable point, and one which I hope to take up at once and try to perfect myself along that line. Another valuable point is the use of the Snow face bow. I agree with Dr. Prothero that the only way to get the casts upon the articulator accurately is by the use of the Snow face bow. I have tried every form of measurement, and I have never been able to do it in the same accurate way that I have by the use of the face bow. It seems to me that this is a valuable adjunct. An anatomical articulator is of very little value, however, if you get the casts turned laterally, because you have not the planes of the surfaces of the ridges in relation to the planes of the surface of the jaws, and you spoil what you started out to obtain. One other thing so often overlooked is the arranging of the casts upon the articulator. It is essential that the bows stand parallel to each other.

I cannot praise Dr. Prothero too highly for this paper. I feel that this Association is to be congratulated upon having him with us, and I feel that his paper is one that we have all enjoyed. The one thing I regret is that he stopped so soon. I was in hopes that he would carry the subject a little further.

Dr. R. I. Blakeman, Indianapolis, Ind.: I feel that I cannot let this paper go by without giving a word of thanks to Dr. Prothero. It is certainly a beautiful thing to see the way Dr. Prothero has handled the subject. Until one has become an expert in this line of work, it is a very up-hill job to do it, and what seems very hard to us has worked out very easy and beautifully in Dr. Prothero's hands. I shall never forget my first experience in trying to mount a set of teeth on the Bonwill articulator. It was in the office of the man for whom I worked at the time. He had met Dr. Bonwill, and Dr. Bonwill had given him instructions for the use of his articulator, and he was giving me the details of the operation. I placed that set of teeth on the articulator in a sort of haphazard way, and then ground on them until there were no teeth left. I worked as hard as I possibly could. I had been raised up in a Christian family, and in a Christian community, but the thoughts that came to me when I realized that I had used that set of teeth up in grinding, I must say, would not go in Sunday school. I worked for a long time, and finally gave up in disgust. Of course, the whole trouble was lack of knowledge in placing the model on the articulator.

Another point in Dr. Prothero's paper that interested me very much was the manner in which he obtained the length of the "bite"; that is, raising the lip to full height to get the size and length of the teeth. That is a very important point, and one which should not be overlooked in order to get the proper length of the teeth. There were so many points in his paper that were interest-

ing to me that I do not feel that I can take them up separately, but I do want to thank Dr. Prothero most heartily for his paper.

Dr. S. T. Kirk, Kokomo, Ind.: I have the pleasure of having had the acquaintance and friendship of Dr. Bonwill, and through him I got to using his articulator a great many years ago. I have always recognized the fact that we need a certain rule of action to place our models on the articulator. I have studied that point a great deal, but never understood the facts as I do to-night. I feel so incapable that I believe I shall just have to go back home and learn it all over again. Still, I have some work that I am not particularly ashamed of.

Dr. J. A. Dinwiddie, Lowell, Ind.: I am an enthusiast in this work, but there is only one thing I wish to say, which, I hope, will make you a little more appreciative towards prosthesis, and that is this: That the operating men of our day shed buckets and buckets of tears for the loss of a tooth, while there is not one tear shed for the poor, toothless being.

Dr. J. H. Prothero, Chicago, Ill.: I have always heard that the gentleman from Indiana was a pretty fine fellow. I am going to use the plural now, and say that the gentlemen from Indiana are pretty fine fellows, but I never knew that they were capable of throwing so many bouquets as have been cast to-night.

As has been intimated, I met with an accident the 10th of May, which disabled me and put me to bed for some time. As a result, I missed our own State society meeting, at which I was to deliver a paper on another subject, and I was pretty badly discouraged. Then came the closing of our school, and the preparation of this paper, which I had already begun, was still incomplete. I finished it to-day, which accounts for the gentlemen who were to open the discussion not receiving a copy, and I hereby tender them an apology for my seeming neglect. I am disappointed in the effort here presented for the reason that there are so many interesting things that I could not even touch upon.

There is not a man in this room who cannot get an occluding frame and the appliances that go with it and get to work. While he may meet with failure at first, anything that gives such results is certainly worth striving for. The teeth on the denture I will show you Thursday morning, if I am able to stay that long, were ground and arranged one by one in the wax, just as described, in 20 or 25 minutes, and I am not particularly expert either. I have no more ability than most of you gentlemen have. You can do the same thing. I always hold that what one man can do another man can do, and if this first man does it well, the other man can do it just as well if he has the right spirit in him. This is what I am trying to arouse among you to-night. I want to say that the profession in Indiana has just as many following this line of work as

it has in Illinois. I know that this is a fact from reliable information. The number of plain line articulators sold, as compared to the anatomical occluding frames, tells the story. The plain line articulator should have no place in the laboratory whatever, not even for crown and bridge-work. The construction of crowns calls for the reproduction of the movements of the human jaw, so that the occlusal surfaces of the bicuspid and molars, when the lateral motion is used, will occlude, and not interfere, and for this reason you should use an anatomical articulator. There is not a man in this room who cannot construct dentures that are occluded anatomically, and almost perfect. This system enables you to get from \$50 to \$75 for full upper and lower dentures, instead of \$25 and \$30. There is not a profession to-day whose members, on the average, are paid so poorly as in the dental profession; there is no class of men who give their time and energy for the benefit of suffering humanity for so little compensation. Now, if you are able to give your patients better service, if you can make a denture with which they can chew beefsteak or any other food properly, so that it can be taken into the stomach—as can be done by this system—you have a right to charge them more, and patients will be willing to pay better fees. It means better health to them. I have constructed dentures for patients for whom impractical dentures had been constructed, other dentures for some who were using dentures only partially successful, and dentures for some who had only recently lost their teeth. In every instance satisfactory results have followed the use of this system.

A Voice: Do you make any attempt to use the anatomical articulator in the construction of partial dentures?

Dr. Prothero: Yes. There is not much variation in the steps in the construction of a full upper or lower or partial cases. It is a very easy matter to get the key to the occlusion.

Two or three have mentioned the method outlined as my method. The method I have presented to you was taken from the writings of Bonwill, Walker, Snow, and Christiansen, and others I could name. What I have tried to do is to gather the best from each of them, giving each man credit when it is possible. If I have been able to assist you in this good work, I shall feel fully repaid for my trouble.—*Dental Summary.*

MEDICAL THOUGHTS, FACTS, FADS AND FANCIES.

To the Editor of THE CANADIAN JOURNAL OF MEDICINE AND SURGERY :

Zola has said in "Fecondite" that 20,000 women in France, not from necessity, had voluntarily submitted to the operation of being unsexed in order to escape the possibility of being burdened by the fruit of their wombs. This most horrible statement of the condition of women and the dangers they willingly submit to is proven or endorsed by Leon Daudet in *Les Morticoles*, and in *Les Florifènes*, by Camille Pert, however to some appearing as exaggerations, is worth study to illustrate the state of society and the depravity of a nation which is most rapidly rushing headlong to the destruction that awaited and reached Babylon. One will ask, "Is it possible in this civilized land of ours, that any young woman would, not from disease of any of the sexual organs, voluntarily submit to the operation of being unsexed?" To this question the answer is, "Yes; there are records preserved in the memory of men, but these records are few." However, in time, foolish young women, assisted and encouraged by young and aspiring surgeons, will arouse an American Zola, who, with words more carefully selected, not banal, will give us a chapter that will arouse moralists and all good citizens, who have apparently been sleeping during the last decade—even longer—while their sisters, daughters, even wives, and the innocents among their acquaintances have had their ovaries removed—to please operators in search of reputations more than to satisfy the demands of honest surgery for the removal of diseased organs. It may be said and with encouragement that humanity has to some extent been wise enough after the slaughterers have been surfeited with blood and won honors, so termed, to quickly consider in due time, even if late, the widespread havoc and the great losses our own and other civilized countries have sustained. Why not the sterilization of men? No, except in the case of criminals of every grade, and although this has wisely been advised and considered, yet it is not adopted as it should be. This age, it may be said, considering the widespread publicity it allows to be produced and introduced, of sexual interests, so-called, is not wisely tolerant of or enriched by this so-called literature, but is really debased thereby.

That lawfully qualified doctors should assist in spreading any writings relating to the genitalia of either sex, whereby others not of our profession are the supposed readers, is an injustice not only to themselves as doctors, but to us who are compelled to call them brothers, to all of the best interests and good and honored name

of medicine, and not least to the country which very unfortunately for its honor gave them birth, or which contains residences for their foul bodies.

It is unbecoming to us who, as contributors to medical literature, make explanatory remarks in reference to what may be termed delicate subjects, to use vulgar expressions or words, even if medical journals should be given our copies, for our lexicons are rich in words and terms or expressions, which, when carefully selected and introduced, convey the thoughts of the brother without the evidence, too often noticed, that the writer was a blackguard—unfortunately a doctor.

The several able and most distinguished writers whose articles have occasionally appeared in our best journals in medicine, have so modestly and professionally clothed their words and expressions, that if one holding a D.D. and was in possession of our medical works were to assume authorship he certainly could not have succeeded better in using clean words and expressions while describing the many disorders, the result of too much civilization, so-called, and the absence of the belief in too many instances of the divinity in man and the divine possibilities and responsibilities, of which he too often is ignorant. If the author of *Religio Medici* (Sir Thomas Browne), or Harvey, or Sydenham, or any of those of our venerated masters were to give literature of a case whose history was repulsive, one fact is this, that the scholarly men among us could most intelligently read such classical literature without disrespect to themselves or their profession. The absence of ability to express one's views or description of the said delicate subjects in language purely medical and classical, is evidently due to lack of scholarship in the English or ancient classics so prevalent in those who too frequently disgrace our medical journals by their banal writings. Then, too, the advertisements, so-called ethical, of our medical journals, are, when associated with illustrations, none too chaste, and too often not in keeping with the dignity and honor of medicine and as proof one has illustrations before him when inspection of any medical journal is made, and it is needless here to give examples, for if such were done it would be adding material to our disgrace. Now and then I notice in our journals statements that some weak brother allows, and with his encouragement, his wife to discuss with him current medical publications. Such admissions, however, fortunately for the honor of medicine, are few, for a doctor's wife should be an exemplar of purity and a leader in the ranks for its encouragement, yet if debased in or by sexual thoughts, the daily papers, new cure fads, corset journals, religious monthlies, whirling spray syringe advertisements, advertisements of bust developers, etc.,

will partially satisfy her salacious cravings, corrupt thoughts and aspirations.

The publication in book form of matter in any way descriptive of sexual relationships and disorders by qualified men in our ranks has never produced the good results had in view by the over-zealous and yet narrow-minded authors; in fact, when such information is thus publicly launched it often proves misleading or misunderstood and very frequently is injurious to the lay reader and always to the family doctor, who not only has to combat the newly-acquired ignorance and erroneous impressions of his patient, and in so doing will find stubbornness and want of fidelity ever present and in association, which are as detriments to the welfare and cure under advisement. No one honorable man bearing the relationship to us of brother in our profession will ever defame himself and medicine by authorship of any work which may be classed with publications bearing such titles as "The Family Physician," "Medical Adviser," etc. If so, he is indeed ignorant of the harm that will be produced through his ill-founded zeal and furore for authorship, not least the injury to the work of his honest brother. To the traitors in medicine—those who are unfortunately licensed by our State or Provincial licensing boards—unfortunately for our good standing and work—obscene medical literature and false promises are their stock. Yet these non-supporters of our medical ethics, of whom it may be truthfully said, "Gentler pirates never scuttled ships," exist and are allowed to exist and grow rich, and even our medical journals encourage and our State or Provincial medical societies through indifference or the lack of formulated restrictions, silently encourage.

"*Fidus in Arcanis*" appears on the seal of my Provincial license. "*Studia Abcut in Mores*" is on the seal of my diploma, and there appears in the diploma a sentence which states that I have proven a worthy and educated man, worthy of the honored degree of Doctor in Medicine. If such an honor has been given by long study and examination, is it not my duty as an alumnus and as a good citizen to follow the brief teachings of these Latin words? If these admonitions are not sufficient, my own conscience and the knowledge that I am a member of one of the most learned professions, whose virtues have been "cradled in story and nourished in song," should afford me instruction what to do, and what to avoid to preserve professional good standing, while encouraging and advancing, in my humble way, every good interest of our profession—even if to the minorities does such fidelity appear as essential when there are so many weak links in the medical chain.

A weak link, and untrustful is he whose misguided zeal

prompts him to do any act by which he is disgraced and such acts are too frequently those as have herein been named, not forgetting others, of which the endorsement and use of purely proprietary so-called ethpharmaceutical preparations and testimonial-giving may be named, which are condemned by our code or principles of medical ethics, which the father of the American Medical Association, N. S. Davies, M.D., LL.D., of Chicago, so well illustrated and encouraged in his teachings and his writings. Yet if one carefully reviews the most rascally literature, such as refers to non-ethical and non-official compounds, and of which our offices are the dumping-grounds, it will be found too often to our disgrace that many professors and other leading lights are guilty of testimonial writing.

We can and will pity him, our brother, who in his ignorance—in his youth—ignorant of medical ethics (for such was never mentioned by his professors), who egotistically writes a paper for his journal in praise of a patent dope; but when the aged President of a Western State Board of Health or licensing system, who was quite recently the President of a State university and has LL.D. attached to his name, affixes his name as an endorser of a proprietary preparation, we abandon hope. The signature of this weak brother is attached to the State license on Diploma A., No. 4018, which names me as a licentiate. The only medical journal of said State has, when publishing the names of the State's licentiates, furnished each member of the State Medical Board with a copy of Medical Ethics quite similar to that issued by the American Medical Association. Is there any excuse why an old practitioner, a President of the State Board of Examiners, should be ignorant of medical ethics, which to us M.D.'s is as much a religion as the Ten Commandments are to the Christian world. Dr. Cathell, in his able work "The Physician Himself," for many years has re-echoed this fact, and in my "Medical Ethics and Cognate Subjects" it has been repeated. My MSS. for a new publication contain many references to the code; its personal and public necessity; its demands, and reasons for adherence to it if we believe "united we stand, divided we fall." "We must hang together or we will hang separately," said the immortal Franklin, and the divine Hippocrates—*Princeps Medicorum*—who wrote the oath which Gomerz says "is the most memorable of all human documents," tells us that if we wish to give away our studies and our experience our sons and the sons of fellow practitioners should alone be the ones selected as our disciples. When I am told that nurses are instructed in medicine and that even our best men are instructing butterfly nurses in the *arcana* of our profession, I endorse, unreservedly, the old statement that "we doctors are easy

marks." I ask, "Were the Japanese spies feasted when caught in the act of taking draughts of fortifications in the vicinity of Los Angeles?" Does the legal profession honor and nourish those who, as assistants or hangers-on, may be anxious to get into the shoes of their masters? No! Does the ministry encourage, feed and house those who are quietly undermining their churches? No! Does the Law or the Church allow its satellites to assume for themselves the title of "*profession*" and to be considered the equals if not the superiors of their masters? No!

With no wish or attempt to express my views in felicitous expression (*felicitas curiosa*) I sincerely hope, however, that one or more suggestions or interests named may be worthy of the attention of my zealous brother, and if I have presented this paper in vain, and if it is not pregnant with good thought or consideration, certainly love's labor has been lost, and with Anne of the "Merry Wives of Windsor," I must exclaim: "Alas, I had rather be set quick i' the earth and bowled to death with turnips."

I may be pardonable in this publication of a midsummer night's dream, however I will await your decisions, consoling myself with this: *Finis honorat opus: stant omnia rite peracta* (the end atones; all's well when all is done).

JAMES S. SPRAGUE, M.D.

Stirling, Ont.

ADVERTISING UNOFFICIAL PREPARATIONS.

THE American Medical Association—or rather the bureau which controls the association, for it cannot be supposed that the members at large had any concern in the matter beyond the perfunctory passage of any resolutions presented to them from the council chamber—has recently communicated to the medical press of the country a resolution adopted at its last annual convention requesting them to refuse advertisements of all unofficial remedies which have not yet been passed upon by the Council on Chemistry and Pharmacy and assigned a place in its blue book.

It is unnecessary to reopen at this time the whole subject of proprietary remedies and the jurisdiction of the Council on Chemistry and Pharmacy. Undoubtedly the communication referred to will carry to the society organs in the various States the expression of a more or less peremptory command, which we, nevertheless, venture to predict will not be any too broadly observed. For the rest, it is enough to point out that there are many and excellent reasons why the independent medical press cannot and should not

comply with a request of this gratuitous and unreasonable character.

It might, indeed, occur to any intelligent person, as a foregone and axiomatic reply to such a propaganda, that the independent medical press, in virtue of the essential nature and quality of its function, is estopped from complying with the request. It is like asking an employer who is, as a matter of principle, contending for the open shop, to treat with the union. The independent medical press has obligations which it is bound to fulfil, no less than the society organ—obligations more sacred and binding because more fundamental. It stands distinctively for the independent practitioner, *whether inside or outside of the union*, who, while he approves of organization for purposes of scientific and economic progress, *denies both the right and the expediency of any organized paternalism, and resents any attempted curtailment of his individual judgment.*

But supposing that we waive the question of unionism, and discuss the matter sheerly upon its merits; the result will not be widely different. Granting, for the nonce, the value and validity of the Council's function, is it wise at this time to engage in a concerted boycott of all those pharmaceutical preparations which have thus far failed to undergo its investigation and to receive its approval?

In the first place, the number of preparations already passed upon by the Council is exceedingly small. It cannot for a moment be assumed that all the rest are unworthy. Does the Association really and seriously suggest that all preparations—many of which are in every-day clinical use and favor by thousands of practising physicians throughout the country—shall be arbitrarily kept in the ante-chamber, cooling their heels and awaiting the convenience of the self-constituted grand jury? And if so, *cui bono*? It does not even appear that the Council is provided with, or is employing, any clinical methods of trying out the preparations under investigation. The fact is—and this affords a further powerful argument against acceding to the Association's ill-advised request—it has already examined and rejected more than one unofficial remedy of whose clinical worth, despite all of the Council's erudite criticism, there is no doubt in the minds of thousands of able and honest practitioners of medicine. Does the Association really and seriously expect that the verdict of the Council upon these preparations will finally dispose of them in the face of their almost universal clinical endorsement?

But far more fundamental than any of the considerations thus far mentioned, is the baneful and mischievous effect which such a concerted action on the part of the medical press of the country would have upon pharmaceutical and therapeutic progress. Scarcely

any proposition could be formulated which would more powerfully demonstrate the pernicious tendencies of an overorganized medical press, and the imperative necessity of the independent journal. Specialized investigation is a very excellent thing in its proper province and at its proper valuation. But there never has been an instance of its playing any effective part in permanent evolution or progress, and in this respect it can never supplant, nor will it ever again replace, the more trustworthy process of natural selection. The adoption of such a plan as that suggested by the Association would set the matter of pharmaceutical commodities back where pharmaceutical knowledge was in the middle ages. It would establish an index purgatorious of pharmaceutical preparations subject to the papal autoeracy of the Council on Pharmacy. Imagine a condition of similar restriction upon the dissemination of scientific knowledge, and figure how much progress science would be likely to make under such a prohibition. Already the free discussion of proprietary preparations in the editorial pages of medical journals is tabooed as an undesirable proceeding; only the very bravest of the independent journals dare to engage in it. Now it is proposed to cut off the economic channels by which the products of pharmaceutical skill may freely reach the medical man for his own unhampered trial and judgment. *Can anyone seriously believe that such a course is for the best interests of medical science or anyone connected with it?*

It must not be supposed, because this is our attitude, that we therefore advocate the throwing open of the independent advertising columns to any and every preparation that is offered, provided only that it pays the price of the space. We anticipate just such an alleged alternative in the thoughts, if not in the words, of our extremely ethical (?) friends; and indeed it has already more than once found expression in their criticisms. But it is not well chosen, and displays a lack of discrimination. On the contrary, we regard ourselves, in our journalistic capacity, as a responsible factor in that true evolution of medical science and medical technique which we have characterized as natural selection. But we do not regard ourselves as the omnipotent arbiter of such evolution. We believe it to be the function of a medical journal to provide, both in its editorial and its advertising pages, "things honest in the sight of all men," and to use its reasonable care and judgment in so doing.

If we are offered, for our editorial pages, an article or a report, emanating from a scientific man, which bears upon its face the ordinary evidences of good faith and honesty, and which, if true, is of value to the practitioner, we publish it. To refuse to give it place until its absolute value had been permanently established would put a stop to all scientific progress, so far as our efforts were

concerned. It is for the medical public, to whom it is offered, to "try the spirits." In the matter of pharmaceutical armamentaria, made public through our advertising pages, the same principle applies. The exercise of reasonable judgment in the discrimination of ordinary good faith and honesty and of probable value to the profession is, in our judgment, the only legitimate part for the medical journal to play in the process of natural selection by which the good is garnered and the useless rejected. The ultimate determination of permanent values is not the function of any journal, nor of the Council on Chemistry and Pharmacy, nor of any other institution, but of the profession at large.—*Medical Brief, St. Louis.*

ABSTRACTS.

Antithyroidin in Basedow's Disease.—De Waele describes the case of a patient, twenty-six years old, who presented all the classical symptoms of exophthalmic goitre. After 70 Cc. of antithyroidin had been employed the subjective symptoms were considerably relieved, the pulse had dropped from 100-120 to 84, and the thyroid swelling was diminished one-third. As soon as the serum was discontinued the old symptoms returned, showing that the drops were undoubtedly responsible for the improvement.—*Le Scalpel*, June 16, 1907.

Treatment of Basedow's Disease with Antithyroidin.—In an undoubted case of Basedow's Disease, W. Baumann gave antithyroidin for three weeks in the following doses: At first 8 drops three times daily, then 10 drops three times daily. All in all, only 30 Cc. were employed. There was no other treatment except electric baths, bodily rest, and very gentle gymnastic exercise. The results were quite remarkable, since the patient felt better after four to five days, and after the three weeks were over had no more complaint. The thyroid tumor had diminished 1 Cm., the pulse was strong and only 70 per minute, and the nervousness and irritability had completely disappeared. There is no possibility of suggestion, since the patient had no confidence in the drug and at first refused to take it. The most pronounced effect was upon the pulse, which was regulated better than by any other drug. Bad after-effects have never been seen. It is best to give the drops in water, and not in red wine, since the latter is not indicated in Basedow's disease. The disappointments which are reported from time to time find their explanation in the fact that too much is expected of antithyroidin in too short a time.—*Berl. klin. Woch.*, May 18, 1908.

The Canadian Journal of Medicine and Surgery

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Editorials.

SHOULD THE ONTARIO MEDICAL COUNCIL RENOUNCE THE RIGHT OF EXAMINING CANDIDATES FOR THE LICENSE?

THE Ontario Medical Council has been of great service to the medical profession and people of Ontario, by providing an independent examination for the license to practice. To obtain the license, graduates of the universities of Ontario, of the other Canadian provinces, or of foreign countries, are placed on a level

and must pass the test with a suitable percentage of marks. Obviously, such a test must prevent the entrance of incompetent persons into the medical profession of Ontario. But a difficulty presents itself. Should candidates who have passed the primary and final examinations in Medicine of the University of Toronto be dubbed incompetent because they have failed to pass the examinations of the Ontario Medical Council? Answering one question by asking others, one might inquire: (1) Are the University examinations easy?; (2) Are the Council examinations hard?; (3) Are the candidates sufficiently prepared? Replies to these questions would depend on the evidence of unprejudiced witnesses, and general replies would be tantamount to guesses. However, it certainly does seem extraordinary that sixty per cent. of the graduates of the University of Toronto failed to pass the Intermediate Course at the examinations of the Ontario Medical Council in 1908. We have learned, incidentally, that Mr. J. H. Cameron, Professor of Surgery in the Medical Faculty of the University of Toronto, was satisfied that the questions asked in the Department of Clinical Surgery at the examination held by the Ontario Medical Council this year were fair and reasonable questions. The unhappy result, therefore, while not reflecting on the professional capacity or industry of the Faculty of Medicine must, in the last analysis, redound to the discredit of the unsuccessful candidates.

In estimating the results of a *viva voce* examination, something depends on the scope of a question, and much on an examiner's method of putting it. For instance, an examiner in Surgery at the examinations of the Royal College of Physicians and Surgeons (Edinburgh), is said to have handed to a candidate a specimen consisting of a hypertrophied bladder and a urethra containing two strictures, and to have asked him the following question, What was the occupation of the owner of these organs? Had Sherlock Holmes himself been the candidate he might have failed to give the correct answer, which proved to be "Making water." The questioning method of another examiner was shown in the following way: Handing a skull, which exhibited a depressed fracture close to a trepanned opening, he asked the candidate to mention some of the more important events or circumstances connected with the later history of the individual to

whom the skull had belonged. The question was not answered. A correct reply would have been: This skull belonged to a man who died poor, as the skull is the property of the museum; the injury to the head, which called for an operation, occurred over forty years ago, prior to the introduction of the trephine into surgical practice; the patient died on the table, because the depressed fracture was not elevated.

Clearly, candidates obliged to face such formidable examiners would require, in addition to ordinary professional knowledge, a considerable capacity for reading riddles. Most probably, none of the questions asked of the luckless candidates at the examination of the Ontario Medical Council this year were of the above-mentioned type, and it is quite likely that a physician fit to practice in Ontario would not have failed to answer such questions as were propounded.

What then? Should the independent examination test be given up, and should the universities of Ontario be allowed to grant the license, as it is granted in Quebec? The Quebec plan is a good one. Examiners appointed by the Provincial Medical Council co-operate with examiners appointed by the universities at the annual examinations in Medicine. There is but one test for the license, but it is made in the presence of two sets of examiners, one appointed by the university, the other by the Medical Council. If the Quebec plan of licensing practitioners were adopted here, complete reciprocity between Great Britain and Canada would follow. Writing on this subject in the *Globe*, June 13, 1908, Mr. J. H. Cameron, Toronto, says: "In this way, by passing the one examination test, our graduates would be admitted to the degree of the university, to the license of the Province, to the register of Great Britain and Ireland, the other provinces and the colonies, and to the portals of the public services of the Empire, and thus stand on a parity with their cousins-german of Laval and of McGill."

In the matter of examinations, the Ontario Medical Council is more interested in testing the capacity of candidates in Clinical Surgery, Clinical Medicine and Clinical Midwifery, rather than in primary branches of medical study. If the combined examination test were adopted, the assessors to be appointed by the Ontario Medical Council should not merely be present at

the examinations as is done in Quebec, but should be allowed to exercise the right of examination, especially in final subjects. Were matters arranged in this fashion between the Ontario universities and the Ontario Medical Council, the independent examination test for the license might be renounced, because (1) The combined examination test would be a sufficient guarantee of the competency of candidates; (2) the Ontario Medical Council should not, by act or neglect, interfere with the legitimate wishes of members of the College of Physicians and Surgeons of Ontario who may wish to practise in the United Kingdom, or any British colony, outside of Canada, or in any part of the Dominion of Canada.

J. J. C.

PUERPERAL FEVER.

PUERPERAL fever is discussed by Dr. McMahon, Milwaukee, in an exhaustive paper, which appears in the June, 1908, number of *The Wisconsin Medical Journal*. It would not be possible to condense all of this paper in an editorial, but we propose bringing to the notice of our readers some of the more important data. A correct appreciation of the symptoms and signs observed in a case of puerperal infection will enable the attendant to decide on appropriate treatment. The symptoms and signs depend on the character and extent of the lesions present and through these one may recognize putrid puerperal infection (sapremia, or septic puerperal infection, septicemia). The symptoms and signs requiring interpretation are: (1) Chill or chills; (2) degree of temperature; (3) frequency of the pulse; (4) arrest of involution of the uterus; (5) character of the lochia.

A chill appearing on the third or fourth day of the puerperium, without premonitory symptoms, save languor, suggests sapremia. A chill appearing on the second or third day, preceded by malaise and followed by headache, is presumptive of septicemia. Invasion of the parametrium is followed by another chill in from four to six days. A chill appearing from the fifth to the seventh day, following the initial chill, and lasting from ten to twenty minutes, invariably means pelvic peritonitis. A

chill appearing during the puerperium and lasting from one-half hour to two hours, indicates general peritonitis.

A rise of temperature to 101 deg. or 102 deg. within a few hours after the initial chill, and followed by an irregular temperature curve, indicates sapremia. A rise of temperature immediately after the initial chill to 102 deg.-104 deg., where it remains for some time, invariably indicates septicemia.

A pulse of low tension, only slightly increased in frequency and not at all in keeping with the elevation of temperature, is found in sapremia. A pulse of 100-110 is the average found in septic endometritis, increasing to 110-120 in local or pelvic peritonitis. A puerperal pulse, small and wiry, with a frequency of 120-140, accompanied by shallow, rapid respirations, indicates general peritonitis.

In sapremia the uterine walls are thin and flabby, pain and tenderness are almost entirely lacking. In septic infection the uterus is sensitive to pressure and palpation causes pain.

A lochial discharge, increased in amount and bloody, containing shreds of membrane, pieces of placenta, often gas bubbles, which may be seen and sometimes heard, and emitting a disagreeable odor, is pathognomonic of sapremia. A lochial discharge, diminished in amount on the first and second day of temperature, increasing again on the third and fourth days, quite bloody, containing pus, with little or no odor, characterizes a septic infection. Absence of odor is particularly characteristic of a streptococcus infection.

Besides the symptoms common to all puerperal infections, a patient with puerperal peritonitis has great thirst, the bowels are at first constipated, but later become loose. Hiccough and vomiting are troublesome symptoms. The legs are drawn up, tympany causes abdominal pain. Respirations are shallow and the face presents an anxious expression. Somnolence, followed by delirium, announce the final stage. When the symptoms present indicate sapremia, local treatment is beneficial. The finger* of the obstetrician, or, if need be, a dull wire curette, is used to remove debris from the uterine cavity. This procedure should be followed by a copious intra-uterine douche of normal salt solution. The patient's uterine cavity is then dried and afterwards swabbed out with a 95 per cent. phenol, followed by

alcohol. A wick of gauze is then pushed up to the fundus uteri, to stimulate contraction. The patient is placed in bed in a half-sitting posture. Occasionally, a second irrigation of the uterine cavity may be necessary, especially if the uterus is antiflexed or retroflexed. If diarrhea is present it should be controlled, but not arrested. Normal salt solution, per rectum, and by hyperdermoeclysis, is useful, by diluting, and aiding in the elimination of toxins and ptomains. In intractable sapremia, due to an adherent placenta, a condition which is diagnosed by the continuance of the symptoms, with no bacteria in the blood, vaginal hysterectomy may be necessary.

If the condition is diagnosed as septicemia, the prognosis of the case is bad. The patient should be kept absolutely quiet, in the open air, and under the direct rays of the sun, for as many hours of each day as possible. Enforced feeding should be employed and normal salt solution administered, per rectum and by hyperdermoeclysis, in doses of 500 c.c., repeated every four to six hours. Excessive temperature should be lowered and restlessness relieved by cold applications, ice-bags or sponge-baths. Anti-streptococcic serum is said to increase the opsonins in the blood, thereby rendering the bacteria more acceptable to the phagocytes, rather than by neutralizing toxins. To get good results from it, it should be used when the first symptoms of puerperal infection appear.

Pelvic exudates or pelvic abscesses should be looked for; if found, they should be evacuated and vaginal drainage maintained. Multiple uterine abscesses are an indication for vaginal hysterectomy. Acute puerperal peritonitis, due to the rupturing of a pelvic abscess, constitutes an indication for immediate abdominal and vaginal drainage.

Acute puerperal peritonitis, following extension of an infection by the lymphatics may, in selected cases, be successfully coped with by a celiotomy. In pyosalpinx, following puerperal infection, the tubes should be removed, after the patient has recuperated, when nature has had time to wall off the pus.

Dr. McMahon discountenances the following forms of treatment in puerperal fever:

- (1) Repeated douching.
- (2) Intravenous injection of a formalin solution.

- (3) Intravenous injection of silver salts.
- (4) Removal of thrombosed pelvic veins.
- (5) Hysterectomy done after symptoms of puerperal infection are discerned.
- (6) Purging with salines.
- (7) Use of the sharp curette.

J. J. C.

EDITORIAL NOTES.

Local Treatment of Erysipelas.—Dr. Dell B. Allen, New York, uses active local treatment in cutting short an attack of idiopathic erysipelas. The affected area is painted with pure carbolic acid, extending the painting about three eighths of an inch beyond the line of redness. The acid is allowed to remain until it becomes white, when it is washed off with 95 per cent. alcohol. Carbolic acid acts as a germicide to the streptococci present in the skin and subcutaneous cellular tissue, while the cauterized ring about the affected area prevents the further march of the infection. This treatment causes a burning sensation for a few moments, but it is quickly relieved by the alcohol. In some cases the burning sensation continues for an hour or two and a cloth saturated with alcohol may be laid on the affected area. If the disease should involve the eyelids, where it is impracticable to use strong carbolic acid, Dr. Allen prescribes a two per cent. carbolic acid solution in unguentum hydrargyri ammoniatum, which is to be applied frequently. He claims that the results of this treatment have been satisfactory in twelve cases of idiopathic erysipelas. The author says: "I have never made more than two applications over the same area, one application being usually sufficient. In one case only did the inflammation spread beyond my first frontier." In no case was there fever on the second day and never any delirium. Desquamation began on the average in four days and was complete in another week, making the duration less than two weeks, instead of three or four weeks, with milder and weaker solutions. The skin under the desquamating epidermis is pink and healthy and heals without scarring. Disagreeable sensations in the inflamed skin—ting-

ling, burning, itching—may be relieved by excluding the air with vaseline or the following preparation:

R	Bismuthi Subnitratis.....	5i
	Plumbi Carbonatis.....	5ij
	Creasote,	℥ ij
	Unguenti Aquæ Rosæ.....	5i—M

Condensed Milk.—Bulletin No. 144, Condensed Milk, (Laboratory of the Inland Revenue Department, contains some instructive data on the composition of condensed milk manufactured in Canada. A. McGill, Chief Analyst, says on the subject: “(1) Condensed milk should mean the reduction of volume of normal milk by evaporation of a greater or less portion of water; (2) When sugar is added, this fact should be stated on the label, and preferably, if not necessarily, in the name of the article, as sugared or sweetened condensed milk; (3) The word *Cream* is largely used to designate condensed milk. This is incorrect and should be made illegal. As a matter of fact, these so-called *creams* are not any richer in milk fat than the sugared condensed milks and many of them are distinctly poorer; (4) Among the samples examined, only one is entitled to be called a cream; (5) The average milk value of most of these samples shows them to be about 2-3 to 2-5 the value of normal whole milk. Hence, a dilution to about two and a half (2-5) times their volume results in converting them, for practical purposes, into milk. The instructions for dilution printed on the labels are quite misleading in many cases. ‘For making a rich cream, add from one to two parts pure water.’ The result would be a liquid containing about three to four per cent. of milk fat, and would be in no sense a rich cream. Several brands advise the addition of three parts water to make ‘a pure, rich, economical milk.’ Such a dilution would give a resultant containing about two per cent. of fat. The sugared milk bears larger reduction of ‘body,’ but the fat content being practically identical with that of the non-sugared kinds, the product of dilution cannot be regarded as other than a very poor milk, thickened with sugar. One brand advises the addition of four (4) parts of water to produce a rich milk. This would give an article containing distinctly less than two per cent. of milk fat. It may be contended,” continues Mr. McGill, “that the consumer should use his own

judgment in diluting. This is true, but it is no justification of the manufacturer who states that the product will be 'a rich cream,' etc."

Corn Oil in the Treatment of Pulmonary Tuberculosis.—Dr. John Ritter, Instructor in Medicine, Rush Medical College, Chicago (*The Journal of the American Medical Association*, July 4, 1908), advises the use of corn oil in tuberculosis. "In making starch the corn grain is steeped until the kernel is softened, and the germ has assumed a tough elastic condition. The warm steeping water is run off, the grain washed and then shredded apart and coarsely ground. This usually suffices to loosen the germ from the rest of the grain. The magma is now placed in tanks of rinsing water, in which the starch granules settle rapidly to the bottom, while the light germs float off from the top. These germs are then washed, dried, ground, and the oil removed by hydraulic pressure. The oil as obtained is very easily refined and clarified, by placing the expressed oil in large air-tight containers for a definite time, when the albuminous matter subsides, or the subsidence of the albuminous matter may be hastened by the addition of an inert insoluble earth, such as kaolin, decanting the clear oil and filtering." As the cost of corn oil is low, as it does not cause the disagreeable eructations which usually follow the taking of cod liver oil, and as it equals cod liver oil or olive oil as a tissue builder, Dr. Ritter thinks that corn oil should be favorably considered by the profession.

A Department of Health, or a National Health Commission.—The editor of *American Medicine*, June, 1908, contends that those who have been urging the establishment of a National Department of Health in the United States have made a tactical error. The Republican machine is opposed to any new departments or any additions to the President's official family. President Roosevelt has gone on record as opposing a Department of Health. In the face of these obstacles to the establishment of a Department of Health, it would have been wiser to have worked for a National Health Commission. This Commission might be composed of three members—a chemist, a sanitarian and a physician—and the work of the Commission could be divided into three divisions—a division of sanitation and quarantine, a

division of pure food and drugs, and a division of laboratory research. Each member of the Commission could head a division, with proper assistants and a suitable organization for the work he would naturally be called on to do. Each division could and would co-operate with the others and a satisfactory scheme of public health defence could be developed. If a Department of Health is not to be created in the United States, it is unlikely that a Department of Health will be added to the Canadian Federal Cabinet. It would be gratifying to the medical profession and useful to the people of Canada, if a Commission of Health were established in Canada. The laboratory of the Inland Revenue at Ottawa has for many years been engaged in the examination of foods and drugs. A division of sanitation and quarantine already exists as a sub-department of the Department of Agriculture. A division of laboratory research could be established; perhaps a statistical division might be added. Such a Commission could co-operate with Provincial Boards of Health, utilizing their work and officials. It would be a tentative measure and its usefulness would be measured by the results of its operations.

Religious Therapeutics.—In the early days of Christianity the functions of priest and physician were often administered by the same individual. "Is any man sick among you? Let him bring in the priests of the church and let them pray over him, anointing him with oil in the name of the Lord" (St. James v. 14). As medicine has become more scientific, the care of the sick has been left in the hands of the physician and most Christian churches do not apply direct therapeutic measures to heal the sick. Exception should be made for the Roman Catholic Church, whose priests sometimes use mental therapeutics when waiting on the sick. Reference might be made to successful therapeutic efforts made at Lourdes in France and Ste Anne de Beaupré in Canada. Religious therapeutics has also been enormously exploited by the Christian Science Church, with very favorable results in some cases. Efforts are now being made by Christian churches in the United States to do something in the way of mental or religious therapeutics. This subject is discussed in *The World of To-day*, March, 1908, by Bishop Fallows, of Chicago. The religious therapist, accord-

ing to him, is to co-operate with the physician, instead of antagonizing him, as is done by the Christian Scientist. Speaking generally, one might say that the co-operation of priest and physician may be of use in selected cases, particularly when patients keep worrying over their physical troubles, aches and pains, which are aggravated by introspection. An appeal through the religious faith of the sufferer may prove effective in tranquilizing the mind.

J. J. C.

PERSONALS.

DR. CLARENCE L. STARR, after September 1st, will confine his practice exclusively to General and Orthopedic Surgery.

DR. R. D. RUDOLF, 396 Bloor Street West, begs to announce that in future he will confine his attention to office and consultation practice.

News of the Month.

ANNOUNCEMENT OF THE NATIONAL SANITARIUM ASSOCIATION.

THE National Sanitarium Association begs to inform the Canadian Medical Profession of a recent reorganization of the medical department of its Muskoka institutions, the Muskoka Cottage Sanatorium and the Muskoka Free Hospital for Consumptives.

Dr. W. B. Kendall has been placed in immediate charge of both institutions as physician-in-chief, with an assistant resident physician at each institution. It is intended also that a resident pathologist should shortly be appointed. In May, 1908, Dr. C. D. Parfitt, who had been in charge of the Muskoka Free Hospital during the six years since its opening, was made consulting physician to both institutions and will continue to live on the grounds of the hospital.

Dr. Kendall, after graduating at Trinity University, Toronto, spent some months in London, Dublin and Edinburgh, where he qualified before the examining boards of Edinburgh and Glasgow (L.R.C.P. & S., Edinburgh; L.F.P. & S., Glasgow). He was appointed to the Cottage Sanatorium on his return to Canada, in April, 1907, and in May, 1908, was also given charge of the Free Hospital.

Dr. Parfitt graduated from Trinity University, Toronto, in 1894, and, after serving as an interne for a year at the Toronto General Hospital, spent two years in London and Vienna. While in London he qualified before the conjoint examining board (M.R.C.S., Eng.; L.R.C.P., London). A year and a half more was given to post-graduate work in Baltimore in the service of Dr. Osler.

In order to extend the usefulness of its work the Association has arranged for its physicians to attend patients who come to Gravenhurst and are unable for some reason to enter or continue in either of the Sanatoria, but who wish to receive special medical supervision.

The Association is very glad at all times to have physicians visit its institutions, especially those who may wish to consult with the sanatorium physicians regarding their own patients in residence.

The Physician's Library.

BOOK REVIEWS.

An Aid to Materia Medica. By ROBERT H. M. DAWBARN, M.D., Professor of Surgery and Surgical Anatomy, New York Polyclinic Medical School; Professor of Surgery, Fordham Medical College, New York; Visiting Surgeon to the City Hospital, New York. Fourth Edition, revised and enlarged by EDEN V. DELPHEY, M.D. Toronto: The Macmillan Company, of Canada, 27 Richmond St. West. 1908.

The changes in the Eighth Decennial Revision of the Pharmacopoeia of the United States of America has made a complete revision of this book, a necessity to conform with those changes. Careful consideration regarding pleasant medication has been given, so that nauseous and bitter medicines are rendered more palatable. The book is most thorough and will be well received by the medical profession.

A. J. H.

Golden Rules of Dietetics: The General Principles and Empiric Knowledge of Human Nutrition; Analytic Tables of Food-stuffs; Diet Lists and Rules for Infant Feeding and for Feeding in Various Diseases. By A. L. BENEDICT, A.M., M.D., Buffalo; Member of the American Academy of Medicine, and of the American Gastroenterological Association, etc.; author of "Practical Dietetics." St. Louis: C. V. Mosby Medical Book and Publishing Company, 1908.

This is a work of convenient size and has good clear type. There are 407 pages, including an index. It is divided into forty chapters, with an appendix of recipes for invalids.

The first twenty-one chapters treat of matters relating to physiological chemistry, the general hygiene of eating, the composition, nutritive value and digestibility of foods; methods of cooking, diet lists, etc.

Chapter XXII. is devoted to infant feeding. The remainder of the book deals with the dietary of the various diseased conditions.

The author has spared no pains to make this work practical and up to date.

In dealing with the various diseases the work does not follow

closely, or rather exclusively, the lines of dietetic treatment, but enters into the etiology and enough of the general treatment to make it a very useful book from that standpoint. It is undoubtedly what its title indicates, the Golden Rules of Dietetics.

W. J. W.

The Sexual Question: A Scientific, Psychological, Hygienic and Sociological Study for the Cultured Classes. By AUGUST FAREL, M.D., Ph.D., LL.D., formerly Professor of Psychiatry at and Director of the Insane Asylum in Zurich, Switzerland. English adaptation by C. F. Marshall, M.D., F.R.C.S., late Assistant Surgeon to the Hospital for Diseases of the Skin, London. Illustrated. New York: Rehnman Company, 1123 Broadway.

For any author to take up and write a volume, small or large, dealing with "The Sexual Question," is no easy task. Even in professional circles, such a writer is sometimes blamed for being a little too plain spoken; but, in dealing with this subject, it is absolutely essential that the author "call a spade, a spade." That there is a lamentable prevalence of ignorance regarding sexual matters, this being due to too great a sense of modesty on the part of mothers especially, is undoubtedly true. The family physician should accept it as part of his mission to educate his patients as to the amount of knowledge to be imparted to growing girls and boys regarding sexual subjects, and, after reading Dr. Forel's book, he will be better fitted to do so. The book consists of, in all, nineteen chapters, each one worthy of careful perusal. We can recommend it as a scientific work and promise that the reader in search of knowledge will be repaid for its study.

Clinical Lectures on Surgical Diseases of the Urinary Organs. By P. J. FREYER, M.A., M.D., M.Ch., Surgeon to King Edward VII.'S Hospital for Officers, and to St. Peter's Hospital; Consulting Surgeon to Queen Alexandra's Military Hospital; Late Examiner in Surgery at the Durham University; Lieut.-Colonel, Indian Medical Service (Retd.). London: Balliere, Tindall and Cox. Canadian Agents: J. A. Carveth & Co., Toronto. Price, \$3.75.

This volume is composed of a series of post-graduate lectures, some of which have been published in medical journals. They have been "amplified, brought up-to-date and arranged in convenient order" until they make a very comprehensive work on the subject. The author's Indian medical service gave him a great field for observation. He seems to have made much of his opportunities. Think for a moment what it means to have operated 1,358 times for stone in the bladder. The average surgeon sees a very small

per cent. of that number. He strongly advocates Litholapaxy and his wonderful experience should make us willing followers.

His work in suprapubic prostatectomy marks a step in surgery. His technique is so simple, his directions so clear and his results so good that it makes one resolve to hereafter choose this route instead of the perineal. The man who limits his work to genito-urinary diseases is not the only one interested in this work. The general practitioner will find it a great help though he does no surgery and the general surgeon will find a splendid guide to his work. It is the work of a master mind.

L. K.

Contributions to the Science of Medicine and Surgery, by the Faculty, in celebration of the Twenty-fifth Anniversary, 1882-1907, of the founding of The New York Post-Graduate Medical School and Hospital. 1908.

This volume came to hand a week or two ago and is without doubt a most important "contribution to the Science of Medicine and Surgery." It is a worthy effort and a fitting souvenir of such an occasion as the Twenty-fifth Anniversary of the Founding of an institution, now recognized as one of the foremost Medical Teaching Bodies in America. The Volume consists of a collection of 49 articles on different subjects from the pens of such writers and teachers as Robert T. Morris, Carl Beck, Max Einhorn, Reynold Webb Wilcox, John J. McGrath, Merman St. J. Boldt, Augustus Caille, W. B. De Garmo, Willy Meyer and a number of others.

We wish to thank the Editors for favoring us with a copy of this Volume.

W. A. Y.

A Text Book of Human Physiology, including a section on Physiologic Apparatus. By ALBERT P. BRUBAKER, A.M., M.D., Professor of Physiology and Hygiene in the Jefferson Medical College; Professor of Physiology in the Pennsylvania College of Dental Surgery; Lecturer on Physiology and Hygiene in the Drexel Institute of Art, Science and Industry. Third Edition, revised and enlarged, with colored plates and 383 illustrations. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut St. 1908.

A work on Physiology pure and simple is to the average every day busy practitioner not particularly helpful. On the other hand, a Book of Human Physiology, written in such a way as to be of practical assistance to a student or practitioner of medicine, is worth having. Dr. Brubaker's Text Book comes under the latter heading, as he has presented his subject in its relation to disease, and its diagnosis and method of treatment. The third edition has

undergone careful revision, a good deal of unnecessary matter having been left out and some fifty pages of new material added, the latter being included in the chapters on the physiology of muscle tissue, absorption, the physiology of the heart and vascular apparatus, the nerve system and vision.

The Treatment of Gonorrhea in the Male. By CHARLES LEEDHAM-GREEN, M.B., F.R.C.S., Surgeon to the Queen's Hospital, Birmingham; Surgeon to the Birmingham and Midland Hospital for Children; Consulting Surgeon to the Birmingham General Dispensary. Second Edition. London: Bailliere, Tindall & Co., 8 Henrietta Street, Covent Garden, 1908. All rights reserved. Canadian Agents: J. A. Carveth & Co., Limited, Yonge Street, Toronto.

Owing to advances in the knowledge of gonorrhea a second edition was necessary and the present volume has been thoroughly revised and brought up to date. A short description of Goldschmidt's new irrigation urethroscope and of the use of Bier's hyperemic treatment in gonorrheal arthritis has been inserted. A practical handbook.

A. J. H.

The Practical Medicine Series, comprising ten volumes on the year's progress in medicine and surgery, under the general editorial charge of GUSTAVUS P. HEAD, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume I.: General Medicine, edited by FRANK BILLINGS, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago; and J. H. SALISBURY, A.M., M.D., Professor of Medicine, Chicago Clinical School. Series 1908. Chicago: The Year Book Publishers, 40 Dearborn Street.

This volume is one of a series of ten, issued monthly, and covering the entire field of medicine and surgery.

Each volume is complete for the year prior to its publication on the subject of which it treats. While this series is published for the general practitioner, at the same time the arrangement in several volumes enables those interested in special subjects to buy only the parts they desire.

The present volume treats of diseases of the respiratory and circulatory organs, the blood and blood-making organs, infections, diseases of the ductless glands, metabolic diseases, and diseases of the kidneys. Three-fourths of this volume is devoted to diseases of the chest and blood.

The articles are well selected and arranged, and nothing better could be desired for a review of this part of the year's work in Medicine.

W. J. W.

The Canadian Journal of Medicine and Surgery

A JOURNAL PUBLISHED MONTHLY IN THE INTERESTS OF
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NO. 4.

Original Contributions.

A CASE OF ACUTE MECHANICAL ILEUS—OPERATION— RECOVERY—REMARKS ON DIAGNOSIS AND TREATMENT.*

BY G. T. McKEOUGH, M.D., M.R.C.S., (Eng.), CHATHAM, ONT.

“The frequent necessity of resection for the relief of intestinal obstruction is a sombre commentary on the diagnostic ability of the profession. In the very large majority of cases, delay in surgical interference is responsible rather than the primary cause of the Ileus.”

These are the opening sentences of an article read in the section on Surgery at the last meeting of the American Medical Association by William J. Mayo. Notwithstanding such comments of so weighty an authority, for obvious reasons it is not unlikely that resection will for some time be necessary in cases of Ileus to give a patient a chance for life. The general practitioner does not meet with cases of obstruction of the bowels so frequently that the diagnosis will ever become so manifestly easy that his acumen will enable him to operate himself or to turn over such cases to the surgeon before necrosis supervenes. Indeed, to the most experienced, the diagnosis is not always clear, but often exceptionally difficult. The late Dr. Nicholas Senn wrote, “That the weak side of intestinal surgery to-day is the uncertainty of the diagnosis.” Vascular strangulation occurs so rapidly in most cases that relief can be obtained only by removal of the damaged intestine.

It is more for the purpose of inviting a discussion of the most important question of the diagnosis and early recognition of cases

* Read at the meeting of the Canadian Medical Association, Ottawa, June, 1908.

of obstruction of the bowels, rather than to publish a successful case of surgery that I wish to report the following:

Mrs. S., aged 30, with a good family and personal history. Has had one child and one miscarriage; after the latter she was curetted, and this was followed by some tubal and pelvic inflammation. She was taken suddenly ill Monday night, August 8th, 1907; she had been as well as usual all day, performing her ordinary duties, but shortly after going to bed was seized with pain in the abdomen and vomiting.

Dr. Musson was called about midnight. He found her in great distress; pain, apparently general over the abdomen, not localized, possibly slightly worse in the epigastrium and umbilical regions. There was no distension, rigidity or localized tenderness, but she expressed herself as feeling very ill. The doctor ordered applications of heat and administered remedies, which relieved the patient's agonies. The following day the symptoms remained about the same, nausea, vomiting, pain and constipation, and on the morning of Wednesday the patient's condition was reported somewhat better. Enemas relieved her of some gas. Dr. Musson saw her during the afternoon; not finding her condition so well he had her transferred to the St. Joseph's Hospital. Her condition the following morning being more grave, I was asked to see her. Her temperature then was 99 2-5, pulse 112, nausea and vomiting still persisting. Abdominal pain was severe, of an intense violent character almost continuous, with slight intervals of subsidence, diffuse but referred in its greatest intensity to the epigastrium. There was general tenderness more marked on the right side, which was dull on percussion below the umbilicus; bowels absolutely constipated. She was pregnant about three months. I suggested an immediate operation, as I thought it offered her the only hope of relief, in which opinion Dr. Musson concurred.

It was, however, late in the afternoon before the patient and her friends would agree to any surgical means of relief. By that time the tympanites was greatly increased and her pulse 136 when the anaesthetic was commenced. The patient had the appearance of great depression at that time. The vomited matter during the afternoon had a strong intestinal odor.

The abdomen was opened through the right rectus. The distension, rigidity and tenderness being greater on the right side than on the left. As soon as the abdomen was opened a large loop of ballooned intestine of a chocolate color with spots quite black was observed. The surface of this bowel was also dull and cloudy.

The bowel above the seat of strangulation was dull red, congested and much distended. The obstructed gut was so largely distended and fragile looking that Mayo's method of going down to the ilium at its caecal termination and tracing the collapsed intes-

tine to the point of disease was followed, rather than handle the blackened gut. The strangulation seemed to be due to a band or drawn out adhesion resulting from old inflammatory exudate connecting the uterus, ovary and mesentery. A loop of intestine being snared and constricted.

Cutting the band at once released the gangrenous coil, notwithstanding that every care was taken in handling the diseased gut which was very rotten, it unfortunately ruptured, after, however, it was taken out of the abdomen. Through the rupture we were enabled to empty the bowel of its noxious contents. Treves says that the addition to the operation, of emptying the bowel contents has reduced its mortality 50 per cent. Wilms in his work on Ileus is of the opinion that auto-intoxication in many cases is the chief cause of death, and in all cases of resection it is therefore important to evacuate the toxic-bowel contents and prevent them from passing down into the healthy distal intestine. Nearly three feet of bowel was excised, and end to end union by a Murphy button was employed, as the patient's condition was extremely critical.

As soon as the patient was under the influence of the anæsthetic normal saline solution was transfused under the breasts. The stomach was lavaged before the patient was taken from the table. On being placed in bed she was raised to a semi-sitting posture and rectal infusion of saline by the Murphy method employed. There was no more nausea nor vomiting after the operation. The bowels moved spontaneously on the third day; she aborted on the fourth day; the button was passed on the tenth day after the operation; and with the exception of a slight post-operative Thrombo-phlebitis in her left leg her recovery was uneventful and perfect.

The early recognition and diagnosis of Ileus is of vital importance because there is only one procedure for its treatment, and that is surgical. The sooner the diagnosis is reasonably clear and operation undertaken the fewer the difficulties met with, and consequently the gravity of the case so much lessened. The most serious feature in the management of obstruction of the bowels is delay. Every hour of delay jeopardizes the only chance of relief.

Treves says, "There can be no purpose in delay; the expectant treatment has had a very extended and deadly trial in the past. It is one of the most serious as well as one of the most fatal conditions a medical man is called upon to face, and operation which is so often regarded as a last resource should invariably be considered as the first and only resource." Hence the urgency of the diagnosis.

Murphy defines Ileus as a complexus of symptoms occurring usually in a fairly regular form and order and represented by pain, nausea, and vomiting, meteorism and coprostasis. The symptoms in the early stages of mechanical intestinal obstruction are first and

most important, severe abdominal pain with nausea and vomiting; there is usually no distension or tenderness, and an absence of fever. When you have severe pain, vomiting and obstinate constipation without fever, without distension and without tenderness or rigidity, which usually comes later, you have a strong case for obstruction, and one should not wait for all the classical symptoms, such as tympanites and faecal vomiting before opening the abdomen. Several acute lesions, however, within the abdomen, such as perforation of a gastric or duodenal ulcer, rupture of a pyosalpinx, passage of a gall-stone, perforation of a vermiform appendix, acute pancreatitis, twisting of the pedicle of an ovarian cyst, etc., are ushered in with symptoms very much similar to those which follow the strangulation of a loop of intestine and often some hours must elapse before differentiating the cause of the sudden abdominal crisis.

The weight of authority, I believe, favors the view that symptoms of obstruction are rather the results of auto-intoxication than of a mechanical disturbance of the nervous structure in the intestine. Pain is always a pronounced and conspicuous symptom. It is usually violent and persistent when the obstruction is complete, generally more or less diffuse but often referred with greater intensity to the neighborhood of the umbilicus which corresponds to the site of the superior mesenteric and solar plexus. There is often slight periods of subsidence, the pain, however, renewing itself again with greater intensity. At first the pain may be relieved by pressure.

Coincident with or quickly following the advent of pain, is nausea and vomiting; rarely it may precede the access of pain. The vomiting is copious and persistent, the vomited matter at first consisting of the contents of the stomach. Then it becomes bile-stained or thin brownish or pea-soup like, and finally, stercoraceous and filthy. Formerly the stercoraceous vomiting was thought to be due to auto-peristaltic movements, but recent experiments have demonstrated that it is produced by contraction of the abdominal muscles and diaphragm and of the mutual pressure that the distended coils of intestine exercise one on the other along the normal peristaltic movements of the bowel. The vomiting usually persists unless the case is relieved, until death.

Obstinate constipation due partly to reflex nerve action, but chiefly to the absolute obliteration of the lumen of the gut, usually appears as soon as the occlusion takes place. The contents of the rectum and sigmoid flexure may be lavaged with enemata, but one rarely sees a spontaneous evacuation of intestinal gases or faeces.

Meteorism is usually a later symptom of strangulation by bands or from hernia; it is most marked when the colon is the seat of the obstruction, and is especially pronounced in volvulus of the sigmoid flexure.

Meteorism is often localized at first in the snared loop of intestine and that portion of the gut above the strangulation; hence the least asymmetry of the abdomen should be carefully observed. The tympanitic abdomen in peritonitis does not depend upon a mechanical stricture, and it must be remembered that meteorism is not due to a mere collection of gas that cannot escape. "the conditions which most favor it are such as lead to gross disturbance in the circulation of the bowel and mesentry."

The degree of shock which is often a marked feature of the commencement of acute strangulation varies greatly in different cases, depending upon the suddenness of the onset, the amount and character of the bowel involved, being much more pronounced when either the jejunum or sigmoid are complicated, owing to their larger and more susceptible nerve supply. It is more marked in the young and vigorous than in the old and decrepit. Collapse is at times quite profound, so that cases of ileus have been diagnosed as cholera and again when a voluminous coil is involved the shock may be of only moderate degree. The early collapse usually passes off again to manifest itself more insidiously in the terminal stage of the disease, presenting a picture which has been so graphically described by Treves, and which we have all too frequently viewed. A condition due to auto-intoxication and identical with that which marks the closing scene of a fatal peritonitis or sepsis.

A study of the urine, faeces and blood of the patient sometimes aid in establishing a diagnosis. Indicanuria has been considered of some diagnostic importance; when indican is found in large quantities in the urine it is said by some authorities to indicate either acute peritonitis or obstruction of the small intestines. If collateral evidences point in that direction, and if acute peritonitis can be excluded the sign would indicate occlusion of the intestines.

Not much can be learned by inspection of the faeces; blood in the stools has a limited significance, except in invagination, when bloody stools are frequently characteristic. Bloodgood, of Johns Hopkins, states that one of the most important early signs of intestinal obstruction is a rise in the leucocyte count; that in his experience of either post-operative obstruction as well as primary obstruction there has been a leucocytosis varying from 15,000 to 30,000 but in the early hours unfortunately there are other intra-abdominal conditions which may account for the leucocytosis, therefore as a diagnostic symptom it cannot be depended upon.

Moynihan, in his magnificent address on the "Pathology of the Living," states, "That so far as abdominal diseases are concerned, he is the best diagnostician who spends most of his time in the operating theater. The lessons there to be learned are far greater and far out-weigh in value those that can be learned in the post-mortem room, in so far as they bear any reference to the treatment of the living."

"He would therefore urge upon all those engaged in practice the desirability of following their patients to the operating table whenever opportunity occurs. The lessons there to be learned will in practice be of a value beyond all reckoning, and interest in the daily work will thereby be quickened to an unaccustomed degree."

In conclusion I should like to again add that the early diagnosis of intestinal obstruction is of supreme importance, for, unless the patient is relieved, the case can only end tragically. Therefore, when symptoms suggesting intestinal obstruction appear they should be given careful and watchful observation, and even when an accurate diagnosis is unattainable, but a presumptive diagnosis is reached, prompt operation is demanded. Operation will save many an unfortunate patient such as has been permitted in the past to perish by inaction.

Discussion by Dr. Hicks, Port Dover, on Dr. McKeough's paper on Mechanical Ileus.

In relation to diagnosis, it is well to remember that in some of the worst cases we will have but little distention and great and immediate symptoms of shock. These cases usually mean a large strangulation badly strangulated. Von Bergmann's work makes especial of this type of case.

Dr. McKeough has already insisted on examination of the urine, faeces, etc.; I think to this we should add washing out the stomach as a diagnostic measure. In a recent case two practitioners diagnosed a mechanical obstruction from pain, vomiting, localized bulging and peristaltic movements with some collapse. I saw the case on the third day, and the use of the stomach tube brought up a further quantity of stomach contents and cleared up the diagnosis. The case was one of prolapse and dilated stomach.

Providence at times provides us with an easy way out of some cases. In a case of volvulus, which I have reported before associated with an old incarcerated femoral hernia, the gut of which was above the volvulus, I was able to practically lance the hernia, making an artificial anus and allowing the faeces to escape freely. The patient picked up at once and had a subsequent operation, when in good condition, with recovery.

Closing discussion:

A case where two practitioners had diagnosed obstruction, proved to be dilatation of the stomach, and washing out the stomach relieved all symptoms. Pain, excessive and almost faecal vomiting, and constipation were present.

Note that distention is not an essential in diagnosis, as the worse the strangulation the less the distention in some cases.

Note use of hernia in making an artificial anus. In two cases one recovered and one died.

CLINICAL REPORT.*

BY E. SEABORN, M.D.

M. S. Aged 72.

In 1895, when 63 years of age, he was troubled so much with frequency of micturition and pain that he began to catheterize himself. He continued doing so for some 9 years, sometimes as often as every 15 minutes during the day. He never boiled or even washed a catheter. When the lumen became clogged he would clean it out with a piece of wire. To obtain a menstruum with which to moisten the catheter he would expectorate into his hand and rub the catheter into that, regardless of what his occupation was at the time. He, of course, at no time took the trouble to wash his hands. He carried the catheter in his pocket. During this time, and especially for the last two years, he had suffered great pain.

In March, 1906, in using an old catheter, a piece (specimen exhibited) some 5 inches long was broken off partly in urethra and partly in the bladder. He pushed this piece of catheter into the bladder with a bit of wire and introduced another catheter. He did not consult a doctor then, nor for some several weeks after. Then he was sent to a hospital in one of the Southern States and an operation to remove the catheter and prostate at the same time was performed. His condition was extremely critical for some weeks.

On Oct. 20th, 1906, he consulted me.

His Condition.—Had great pain at end of micturition along the penis and in the glans. He did not use a catheter. There was a small urinary fistula above the pubes. He held his thumb over this during micturition; at other times there was only slight oozing.

The urine was loaded with albumen pus and epithelium. On examination, per rectum, it was evident that the prostate had been removed. The opinion was given that there might be some infected stitches in the bladder wound or some concretion.

He was advised to have the fistula explored at first. He entered the hospital on October 23rd, and before operation had his bladder irrigated repeatedly. An attempt to examine the bladder with a cystoscope was made, but was not successful, as the urine was cloudy even after prolonged irrigation.

On cutting down to the bladder through the fistula, a cavity was found between the skin and bladder, containing very soft granulation tissue and pus. This was scraped away and the edges of

* Read at the Canadian Medical Association Meeting, Ottawa, June, 1908.

fistula in bladder were freshened. It was hoped that this abscess had been the source of the bladder infection. He had stipulated that the bladder was not to be opened, if it were at all possible to avoid it.

His condition was not improved, and on Nov. 28th, 1906, he went again to the operating room, and the bladder opened and the piece of catheter removed. The irrigations were continued, and the bladder wound closed with great rapidity, and on Dec. 18th he left the hospital.

I saw him some months ago, and he said his only discomfort was that he had to urinate oftener than usual, and that when he felt that he should have a discharge of semen none was ejected, but came with the next urine.

At the last operation careful examination was made and no prostate was found, but only some thickening between the rectum and bladder, presumably the sheath of the prostate. He identified the catheter as the one he had introduced before his first operation.

Dr. H. Williams was present at the last operation and verified the opinion that the prostate had been removed.

Selected Articles.

THE PHYSIOLOGY OF THE THYROID GLAND IN ITS RELATION TO EXOPHTHALMIC GOITER.*

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THE investigations of the last twenty years have given to the thyroid gland a physiologic importance of the first order. So enthusiastic have some observers become in their belief in its primal position in physiology and also, on the part of a few, in therapeutics, that one is almost tempted to compare its supposed potency to the famed fountain of eternal youth whose magic healing and rejuvenating properties was the hope of the aged, infirm explorer. I must confess myself as among those who share the belief that the thyroid is a true gland, whose proper functioning plays such a part in the physiologic rhythm of the body that it stands very near to, if, indeed, not in, the list of viscera to which the term vital is properly applied. I share also in the belief that the thyroid proteids have a wide range of beneficial therapeutic activity, and yet I must, in the beginning of this discussion, call attention to how little scientific knowledge we have of the real significance of the gland and its mode of functioning, and to how large a degree our knowledge is the plainest empiricism.

We know that complete removal of the thyroid apparatus, *i.e.*, thyroid and parathyroid, leads in most species of mammals to a fatal issue in the majority of cases. We may now safely conclude that such a result is due wholly to the removal of the glands and not to a traumatic injury of the nerves in anatomic proximity to the gland. Death from such a complete operation is generally sudden and follows a varying period of severe tetanic convulsions. I think that as a result of the experimental work of the past ten years we may go further and state that the thyroid apparatus is complex and has two well differentiated histologic structures, thyroid and parathyroid, and we have good reasons for believing that the different histologic structure corresponds to a different

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function. Removal of the thyroid alone is followed in most cases by a cachexia, which may in large part be relieved by the administration of thyroid substance. Removal of parathyroids, if complete, is followed by an acute fatal tetany which supervenes in a few hours or a few days.

During the last few months I have carried out some further experiments on this line which give additional evidence of their different function. The experiments have in all cases been made on dogs. The acute tetany has been induced by operative removal of the parathyroid glands. While the animal was in severe convulsion, a hypodermic injection of beef parathyroid nucleoproteid has been given with the result that in from thirty minutes to two hours nearly all the animals have temporarily recovered a normal condition. The improved condition does not last, however, for muscular twitchings begin again in from 24 to 60 hours, and the animal rapidly passes into a tetanic condition. Another injection of the parathyroid nucleoproteid a second time will relieve the animal. The whole procedure may be repeated a third time, but we have not thus far succeeded in keeping an animal alive longer than three weeks after such an operation, but we can nearly always prevent death in the acute tetany. We have some evidence that the convulsions following the operation are due to a toxic condition of the blood, for if animals are fasted for a few days or if they are fed on meat-free diet the convulsions are less severe and appear later than they do if meat is given. Severe convulsions can be brought about in two or three hours by giving an operated animal a heavy feeding of meat. MacCallum's experiments have shown that bleeding the animal in tetany and infusing with normal saline will likewise relieve the convulsions. Further, the blood of an animal in tetany was found to be very toxic to an operated animal before enough time had elapsed for the animal to have tetany from its own operation. The globulin from the parathyroid has thus far failed to relieve the symptom, a fact which indicates a difference in chemistry from the thyroid, as in the latter gland the peculiar iodine group is in combination with the globulin and is, therefore, the proteid of particular physiologic activity.

The older experiments did not differentiate between thyroid and parathyroid, so that the acute tetany following the complete operation has been by them ascribed to the thyroid insufficiency. There are observations on record of relieving the acute symptoms by large doses, 4 to 5 grams, of iodothyron per day. Such doses are far beyond the limits of the physiologic and are not to be compared to the very small amount of parathyroid-nucleoproteid required to do the same thing.

The observations on the effect of operative removal of the glands and on the administration of various components of the glands to animals operated on and to normal animals constitute

the most important known facts about the physiology of these structures. And the facts are briefly as follows:

1. Removal of the thyroid causes cachexia thyreopriva, the symptoms of which may in large part be alleviated by administration of thyroid preparations. Thyroid extracts owe their activity largely to the organic iodine group therein contained.

2. Removal of the parathyroids is followed by an acute tetany. It is on the above observations that all the interesting and suggestive theories useful in the physiologic and therapeutic value of the glands have been founded. Some of these theories have sufficient dignity to command serious respect, but in many of them there is a lack of regard for the fundamentals.

It is a well-authenticated fact that thyroid feeding stimulates nitrogenous metabolism, and it may be that such a stimulation is accompanied by a heightened oxydative capacity of the organism by which toxic products of metabolism are rendered harmless. Hunt has recently furnished the first experimental demonstration of the detoxicating action of thyroid by showing that mice fed with thyroid preparations are able to stand larger doses of acetonitrile without fatal effect than control animals. The beneficial effects in these experiments are not to be ascribed to a direct chemical union of thyroid with acetonitrile, but rather through the metabolic stimulation which the gland extract caused. Although the detoxication theory of thyroid function has very little direct experimental evidence to support it, there is some empiric clinical evidence in its favor, and it has been used by Moeblus as the foundation of his treatment of exophthalmic goiter. The blood of thyroidectomized animals contains a somewhat different distribution of proteids than is found normally, in that there may be an increase in the ratio of globulin and a diminution in the hemoglobin, but there is little experimental ground for supposing that the blood of thyroidectomized sheep contains a toxic, and there is absolutely no reason to believe that this toxin, if it does exist, can combine in quantitative chemical fashion with human thyroid secretion. The supposed mechanism of this therapy is purely hypothetical and is without any analogy in known physiologic action. To Moeblus belongs the credit for first formulating our notions of the hypersecretion theory of exophthalmic goiter, but his means of treatment has the most empirical foundation.

A unique detoxication theory of the function of the thyroid and its rôle in exophthalmic goiter has an ardent supporter in Blum, who believes that there arises in the course of metabolism a toxic globulin which is detoxicated in the thyroid by the chemical addition of iodine. The colloid is, therefore, an excretory product and the more perfectly it is iodized the less toxic effect should it have. (According to this theory exophthalmic goiter is caused by the escape into the circulation of large quantities of this par-

tially iodized proteid.) The theory is based principally on Blum's observation that iodine can be added to the thyroglobulin *in vitro* with the result that its peculiar physiologic properties are completely lost. The latter observation is probably correct, but granting that it is, no conclusions worth entertaining can be drawn from it. Blum's theory contradicts the experimentally demonstrated facts that the iodized proteid from the glands is responsible for much of their physiologic activity, and the equally well demonstrated fact that the activity is proportional to the iodine contained. If potassium iodid be given to an animal there is an increase in the content of physiologically-combined iodine in the gland. Roos has shown that when the glands from animals fed with large quantities of potassium iodid are tested physiologically they show an activity proportional to their iodine content, whereas, according to Blum's theory, such glands should have less physiologic activity than the normal. The artificial iodizing of a proteid *in vitro* is a violent chemical action not to be compared to the behavior *in vivo*. We know, furthermore, that the beneficial effects of thyroid treatment in myxedema may be produced by the circulation of the organic iodine group, a fact which is directly contrary to Blum's hypothesis. His theory of thyroid function will not bear close inspection, but the cause of the exophthalmic symptoms, by an escape of large amounts of partially iodized globulin into the circulation, is identical with the belief generally held to-day. I am personally inclined to believe that one function of the gland may be a detoxication, but I do not believe that this is accomplished by a direct chemical union of the thyroid secretion with a metabolic toxin, but rather by the stimulating and regulating effect which is exerted on other viscera.

Chemical studies of the gland have demonstrated the presence of three forms of proteid, nucleoproteid, globulin and albumin, in addition to a number of the simpler cleavage products of proteid, the latter being bodies of no especial significance. The normal thyroid contains relatively little of the nucleoproteid, much globulin and a smaller amount of albumen; the parathyroid, on the other hand, contains a large amount of nucleoproteid, a very small proportion of globulin and still smaller amounts of albumen. These findings agree with what we should expect from the histology, and in each case the proteid present in greatest abundance is the one most active physiologically. Since the discovery and isolation of the organic iodine group by Baumann most of the chemical study of the gland has been directed toward that compound and the proteid of which it forms a part—thyroglobulin. This is proper from a physiologic point of view, but from the pathology of the gland we must not fail to consider the nucleoproteid. I have had an opportunity during the past two years to separate the nucleoproteid and globulin from a large number of

thyroid glands, normal, simple hyperemic, glands with marked cellular hyperplasia, simple adenoma, colloid goiter, and glands from practically all stages of exophthalmic goiter. In most of the glands from the latter condition there has been found a much larger proportion of nucleoproteid, particularly in the fatal cases. The normal conditions may be entirely reversed and the nucleoproteid be found in as great preponderance as the globulin in the normal gland. Additional confirmation of this point is found in the statements of Kocher and Aeschbacher, that when the gland is rich in phosphorus it is poor in iodin. The phosphorus comes chiefly from the cell nuclei which are much more abundant in the exophthalmic gland. Histologic evidence supports this finding, as in the late stages of exophthalmic goiter there may be found considerable cellular hyperplasia with relatively little colloid. There is practically no experimental evidence on the function of the nucleoproteid as distinct from the globulin, yet in certain pathologic conditions the former must play an important rôle and one of which we are as yet entirely ignorant.

The study of thyroglobulin and its content of iodin has been the main chemical contribution of recent years, and it is especially to Oswald that we are indebted for much of the work since Baumann's time. Oswald has determined the content of thyroglobulin and iodin in many normal glands and simple colloid and parenchymatous goiters. He finds in goiter a great variation in the relative and absolute amounts of globulin and iodin, but his findings may be summarized by the statement that in goiter there is a relatively large amount of globulin poor in iodin. Although he has reported only four analyses of these glands, he bases thereon his latest theory of the disease, viz., a flooding of the system with a globulin poor in iodin. Such a theory really means a hypersecretion of a product of less physiologic activity than the normal. If we consider, however, that normally the blood supply is so great as to permit the entire volume of blood in the body to pass through the gland fourteen times in twenty-four hours, and consider also to how great an extent this blood supply is increased in exophthalmic goiter, we must conclude that this theory means simply an excess of effective thyroid secretion in the circulation. Even though there is less iodin in the proteid than normally, there is no evidence that this indicates a change in the essential character of the proteid. There may be less activity per unit of globulin, but since there is such an increase in the number of units in circulation the conclusion of the chemical study is in favor of the hypersecretion theory. Oswald entirely ignores other proteids than the globulin, a decision which I wish to emphasize again is not satisfactorily explained. The chemical findings in colloid goiter can not be used in an argument on exophthalmic goiter, since in so many cases the nucleoproteids in these latter

glands is quite as important a constituent as the globulin. Although the chemical studies indicate that in exophthalmic goiter the globulin contains proportionally less iodine, such a result does not imply a dysthyroidization as a factor in the disease, for the iodine in the proteid is a measure of a quantitative rather than a qualitative change. The clinical argument that the many types of the disease can only be explained by a dysthyroidization may have some support in the fact that nucleoproteid and globulin are found in glands of exophthalmic goiter in different ratios from those in the normal gland, but an equally probable explanation is to be found in the personal idiosyncrasy toward active proteids.

We know very little of what the thyroid secretion does when confined within physiologic limits, but if given in excess we see as a result many of those symptoms characteristic of exophthalmic goiter. The exophthalmos, tachycardia, tremor, gastro-intestinal disturbance, profuse sweating, increase in temperature, rapid loss in body weight, severe mental disturbance, have all been caused experimentally in animals by overdosing with thyroid preparations. It has thus far been impossible to produce the disease experimentally, and the nearest approach has been obtained by giving an excess of thyroid extracts. There is, however, a serious error in technic in most of these experiments in that the commercial thyroid has been given in intermittent doses by stomach in most cases, but if the physiologic conditions are to be simulated a saline extract of the gland from the same animal species should be given in small, frequently repeated doses hypodermatically. Even then we are not providing the most suitable conditions, as the extract of a normal gland has a distribution of proteids somewhat different from those the diseased secretion contains. One of the most interesting experiments of this kind is that reported by Dr. Matthes, who had a patient suffering from exophthalmic goiter operated on with a curative result. Later when the patient was fed portions of his own dried gland there was an increase in the nitrogen excretion with some return of symptoms.

However, granting that, as seems probable, the hyper-secretion theory offers the most satisfactory explanation of the origin of the symptoms in the disease, we as yet have no satisfactory explanation of the mechanism by which they are brought about. The tachycardia, for instance, has been variously explained, an acceptable theory to many students being that of Gley, who believes the vagus impulses are inhibited and the accelerator stimulated by the gland extracts; yet very recently some experiments on the isolated heart have indicated that the central nervous system may be in no way concerned in the matter.

The mechanism responsible for the other symptoms of the disease are in a more unsatisfactory condition than the tachycardia. The very rapid loss in weight has been repeatedly given

a partial explanation by the stimulating properties which the gland extracts have, but why and how the extracts act in this manner is a subject entirely unknown to us at the present time. The metabolism of patients suffering from exophthalmic goiter has been partially studied in a number of laboratories, and as a result we know that very large amounts of nitrogen are required to maintain an equilibrium during some stages of the disease. Recently in our laboratory more complete analyses of the urine have been made by Dr. Shaffer, and the most interesting new fact which can be drawn from these studies is that the kreatinin excretion is low compared with the normal, and the lower figures always go with the more severe toxic forms of the disease. When the patient improves there is a corresponding rise in the kreatinin output. With the low kreatinin excretion there is an increased kreatin excretion. We know little of the origin of kreatinin in the body, but Dr. Shaffer has recently advanced the theory that it is a measure of the muscular efficiency; such a theory is supported in this disease by abundant clinical evidence and by the measurements of the strength of selected groups of muscles made by Dr. Frederich Muller, who has found that in patients suffering from exophthalmic goiter the muscles are no more than one-fifth to one-third as strong as in normal individuals.

There are two commonly accepted possibilities which explain the origin of the hyperactivity of the gland. First, as a result of nervous shock; second, as a compensatory hypertrophy during a toxemia.

As to the first possibility, the investigations of the last ten years have given us a fund of information concerning the remarkable control exercised by the nervous system on glandular activity. Particularly with reference to the digestive glands we have seen qualitative and quantitative changes in their activity following an apparently insignificant stimulus. We have no direct experimental evidence to indicate in how far we can apply these results to the thyroid gland, but clinically we see many instances of marked change in the activity of the gland following some profound nervous disturbance. The condition may have been latent before and first becomes evident following some severe fright or sudden sorrow. Why the effect should last beyond the stimulus which called it out we do not know. That a new habit of abnormal activity may result from a series of repeated stimuli is an hypothesis put forward to account for many instances of physiologic overwork, and it may apply here.

As to the second hypothesis, there are some histologic studies which indicate that during the infections and also during chronic toxemias the thyroid undergoes cellular hyperplasia which may serve in the nature of a compensatory hypertrophy, *i.e.*, the additional demand for the detoxicating action of the gland results in

its growth. At present we have no method of measuring the activity which the gland has either in a normal or pathologic condition and can form only the crudest notions by the gross appearance and histologic structure. It is, therefore, rash to conclude that in those cases of exophthalmic goiter, with no goiter there is no hyperthyreosis. There are many clinical observations that support the theory of compensatory hypertrophy, and it is the mere bulk of this evidence rather than its character which is impressive.

In conclusion I must again call attention to our dearth of knowledge of the physiology of the thyroid gland and the pressing need for systematic, careful investigation, both on the part of the laboratory worker and the clinician. Theories we must have, for it is by these that we grow, but the danger lies in accepting an attractive theory as an established fact.—*Journal of American Medical Association*, October 5, 1907.

THE PATHOLOGY OF EXOPHTHALMIC GOITER.

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The symptom-complex, which we know under various names as exophthalmic goiter, Graves' disease, Basedow's disease, etc., has been very extensively studied, but even yet there is not perfect unanimity of opinion as to the anatomic changes which underlie these symptoms. Nearly all writers, except certain clinicians who have not made anatomic investigations, agree that there are always changes in the thyroid, although there has been much debate as to whether these changes are constant in character or not. There are others who think that the lesions must be sought in the sympathetic system or in the central nervous system, while still others regard the disease as the result of a functional disturbance of the nervous system and do not expect to find gross anatomic changes. Other attendant lesions in the eyes, in the skin, the muscles, the digestive tract and in the lymphoid tissue and thymus have been frequently described, and organs of internal secretion other than the thyroid, such as the parathyroids, adrenals, pancreas, hypophysis, etc., have been investigated with varying results. Since Moeblus put forward his idea of the fundamental relation of the thyroid to the disease, attention has been centered chiefly on that organ and it has formed the point of attack in therapeutic measures, but the other lesions must still be regarded as worthy of close study, and in this paper the changes found in a rather

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large series of cases will be taken up in order. It must be observed, however, that none of the changes which have been generally found and which I have found in my series have the character of primary changes. They seem in each instance to be the response or reaction to some fundamental or primary disturbance of which as yet, I think, we have no very clear notion.

Disturbances of metabolism in these cases are obvious, and these seem to be intimately connected with the fundamental activity and corresponding anatomic condition of the thyroid, but whether as cause or effect is not absolutely proved. Similarly pronounced nervous disturbances occur, the heart runs riot, the body trembles, secretions are disturbed and the mental condition and temperament are altered, but whether this is the result of chemical changes or of obscure anatomic lesions in the nervous system we are not certainly informed. Whatever vague notions we have as to the fundamental underlying cause of all these things we may discuss after describing the anatomic changes.

It has been shown by Halsted and others that if a portion of the thyroid be removed from an animal the remainder shows after some time a curious alteration, which consists essentially in the great proliferation of the epithelial cells by a process of mitosis. So great is this new production of cells that they become too numerous to be accommodated on the smooth wall of the round alveolus and the epithelial lining accordingly becomes folded in the most complicated way, each fold carrying up with it into the original lumen a supporting strand of connective tissue with blood vessels. This change in the alveolar wall is followed by a decrease in the amount of visible colloid, which loses its hyaline dense appearance and becomes pale and ragged. The whole process has been regarded by Dr. Halsted as a compensatory hypertrophy, the proliferation of the epithelium being an attempted repair of the loss of thyroid substance. A similar condition is found in a small percentage of stray dogs in Baltimore and occasionally in sheep and goats, while in certain localities, as reported by Dr. Marine, in Cleveland, in a recent paper, an enormous proportion of the stray dogs are thus affected.

What the cause of this hypertrophy can be is not perfectly clear, but Dr. Marine has observed that if these dogs be given iodids in considerable doses the alveoli again become round and filled with colloid, and Dr. Kocher tells me that the administration of iodin will prevent the development of the folded condition after the operative extirpation of part of the thyroid.

Now in exophthalmic goiter the thyroid presents an appearance practically identical with that found in these animals, and it will be my task to describe in greater detail these anatomic appearances as they occur in this disease. It is true that none of the symptoms found in exophthalmic goiter are observed in the animals

operated on nor in those in which the hypertrophied condition occurs spontaneously, but still the analogy is of great interest.

The material which I have had for study consists of sixty patients, most of whom have been operated on by Dr. Halsted for the relief of symptoms more or less typically those of exophthalmic goiter, and I am much indebted to Dr. Halsted for this material. Not all of these cases presented the complete typical picture of exophthalmic goiter; some of them, as will be recounted, showed part only of the characteristic symptoms, while some were complicated by the presence of other lesions of the thyroid and other organs. It will be of interest, however, to determine in how far the anatomic changes correspond with the development of symptoms, and this can be done briefly, more exact data being obtainable from the Table on this and following page.

From this table it is seen that in certain cases the changes in the thyroid are very well marked and are of a characteristic type, while in others they are less easily recognizable.

The more characteristic changes may be discussed first. In most instances the thyroid is enlarged, although, as a rule, not to a great size; in some cases it is not larger than the normal or it may be actually decreased in size. At operation the superficial

TABLE OF EXOPHTHALMIC GOITER CASES.

Case.	Character of symptoms.	Duration.	Character of thyroid.
W.	—Typical.....	6 mos.....	Typical.
R.	—Indefinite.....	9.....	Colloid adenoma, indefinite changes.
H.	—Typical.....	.....	Typical.
S.	8070.—Typical.....	3 yrs.....	Typical.
C.	8076.—Typical.....	6 yrs.....	Typical combined with adenoma.
H.	2894.—Typical.....	3 yrs.....	Typical.
S.	8074.—Typical.....	1 yr.....	Typical.
M.	8066.—Indefinite, no exoph. no nervousness.....	2 mos.....	Normal.
S.	7142.—Typical.....	8 mos.....	Typical.
B.	7536.—Indefinite.....	1 yr.....	Colloid adenoma, slight hypertrophy of epithelium.
T.	5216.—Indefinite, no exophthalmos.....	3½ yrs.....	Cyst with wall of hypertrophied thyroid tissue.
D.	6045.—Typical.....	1 yr.....	Typical.
Y.	6886.—Typical.....	1½ yr.....	Typical.
E.	7425.—Typical.....	.....	Typical.
H.	7321.—Typical.....	3 yrs.....	Typical.
R.	7278.—Typical.....	1 yr.....	Beginning folding in walls of large alveoli.
C.	7375.—Typical.....	3 mos.....	Typical.
J.	6955.—Typical.....	.....	Typical.
S.	7351.—Moderate.....	5 yrs.....	Large alveoli, slight folding.

G.	7122.—Typical.....	2 yrs	.....	Large alveoli full of colloid, complicated folding.
L.	7897.—Typical.....	3 mos.	.....	Typical.
F.	—Indef. goiter, nervousness	1 yr.	.....	Beginning changes in walls of large alveoli.
S.	8071.—Indef. tachycardia.....	18 yrs	.....	Exoph. changes in adenoma, not elsewhere.
S.	8046.—Indef. exoph. tremor, no goiter.....	5 yrs	.....	Beginning changes in walls of large alveoli.
P.	5883.—Indef. nervousness, tremor, no exoph.....	1 yr.	.....	Normal.
G.	6202.—Typical.....		.....	Typical.
B.	7158.—Indef. no exoph. tremor, wasting.....	2 yrs	.....	Beginning changes in walls of large alveoli.
T.	7212.—Indefinite. tremor only, pulse 100.....	Gradual	.....	Indefinite, beginning changes.
A. I.	7953.—Typical.....	6 mos.	.....	Typical.
N.	610.—Typical.....	2 yrs.	.....	Typical.
T.	2775.—Typical.....	3 yrs.	.....	Typical.
H.	4017.—Typical.....	6 mos.	.....	Typical.
H.	4055.—Typical.....	2 yrs.	.....	Typical.
R.	4170.—Typical.....	2 yrs.	.....	Typical.
C.	4538.—Typical.....		.....	Typical.
S.	2079.—Typical.....	4 yrs.	.....	Typical.
W.	4808.—Typical.....	2 yrs.	.....	Typical.
W.	5254.—Typical.....	2 yrs.	.....	Typical.
D.	5334.—Typical.....	8½ yrs.	.....	Typical.
B.	5335.—No exoph. goiter, tremor, tachycardia.....	1 yr.	.....	Foci of proliferation, much colloid, lymphoid hyper.
L.	5379.—Typical.....	9 mos.	.....	Typical.
M.	5404.—Typical.....	3½ yrs.	.....	Typical.
W.	5582.—No exoph., nervousness, tachycardia, goiter.....	1 yr.	.....	Foci of typical change, other areas normal.
S.	5634.—Indef. goiter with tremor only.....	1 yr.	.....	Colloid adenoma.
G.	5199.—Goiter 28 yrs.; exoph. symptoms 5 mos.....	5 mos.	.....	Indef. changes in old goiter.
F.	5651.—Typical.....	2 yrs.	.....	Much folding in large alveoli; typical.
B.	5806.—Typical.....	8 mos.	.....	Typical.
S.	5873.—Indefinite.....	8 mos.	.....	Colloid adenoma.
E.	5914.—Slight symptoms.....	6 mcs.	.....	Slight changes in large alveoli.
M.	—Typical.....		.....	Typical.
L.	5991.—Typical.....	13 mos.	.....	Typical—focal.
E.	6019.—Typical, moderate.....	3 mos.	.....	Typical.
W.	—Typical.....	5 yrs.	.....	Typical.
H.	4744.—Typical.....	3 yrs.	.....	Typical.
K.	—Typical.....	2 yrs.	.....	Typical.
P.	—Typical, moderate.....	5 mos.	.....	Typical.
H.	—Typical.....	2 yrs.	.....	Typical.
J.	2827.—Typical.....	15 yrs.	.....	Typical.

veins are found to be very large and easily torn and are distended with blood so that the gland has a very congested appearance. This is not striking in the excised portion, since the vessels collapse and on section the interior of the gland tissue is rather pale. Usually the tissue is hard and rather rigid than elastic. Its normal amber red translucence gives way to a grayish opacity and the fresh cut surface, instead of being glairy or gelatinous in appearance, tends to be rather dry and granular. This varies, however, with the amount of colloid material in the alveoli, and in many advanced cases the cut surface may be still moist and give off a little glutinous material. The surface of the gland is usually somewhat nodular and rough, and this is seen to be true also of the surface, in which it is found that fine strands of fibrous tissue traverse the glandular substances, separating it into lobules.

Usually the change is diffuse throughout the whole gland, but sometimes one lobe may be much larger than the other, and in some cases the alterations described are present only in small patches here and there throughout a gland which otherwise seems nearly normal. These foci are easily distinguished by their fine grain and by their opacity from the adjacent colloid holding tissue.

Microscopically there is found the change which appears in the experimental compensatory hypertrophy. Strands of fibrous tissue run in every direction like scars through the gland and separate the tissue into lobular masses, and in these lobules the alveoli are often still separated by a fibrous tissue stroma much more abundant than in the normal gland. The alveoli are no longer rounded, full of colloid, and lined with low cubical epithelium, but are extremely irregular in size and in form. As a rule most of them are smaller than normal, while in the central part of each small lobule there are larger alveoli of very irregular outline, sending out diverticuli in every direction and encroached on by epithelial projections which extend into their lumen. With some special method of staining the connective tissue it may often be made clear that such a small lobule is probably a sort of colony in which the smaller peripheral alveoli are derived from the more centrally placed or are actually merely sections of the diverticula of the central ramifying alveolus. This alternation of large irregular alveoli with small ones ranged round them is very characteristic and evidently results, in part at least, from the separation of portions of the central cavity in the form of new alveoli.

The epithelium becomes columnar not only in the large alveoli, but in the small ones as well, and thus occupies so much space that there is but little lumen left. Indeed, the areas occupied by the small alveoli may appear almost solid, so small are their cavities and so scant the colloid. In most instances the epithelium is very regular in its form throughout and the details of its structure can be made out very clearly. The cells are plump, with a

finely granular protoplasm and a sharp outline. The free surface is very sharply marked and is sometimes slightly dome-shaped. The nucleus may lie near the base or near the free end of the cell. Mitotic figures are frequently to be found. Occasionally some of the cells appear narrow and shrunken and biconcave in form, with a very deeply stained nucleus and dark red protoplasm. These are the so-called colloid cells of Langendorff, thought by him to be especially concerned in the secretion of colloid, but which seem to us rather more like the result of some degenerative process. Only rarely could the so-called *Schmelzepithel* of Hürthle be seen and then it seemed obvious that it was the effect of mechanical dislodgement and disarrangement of the cells. Similarly the extensive desquamation of the epithelial cells which one so often sees in specimens removed at operation seems to be due to the considerable pinching and handling through which the specimen unavoidably passes during the operation. Nevertheless, we have met with one or two cases in which, in association with especially severe symptoms, there has been found widespread desquamation of the epithelium, probably not the result of pinching the gland, and this is regarded by some, especially by Dr. Bloodgood, as a feature associated particularly with very severe symptoms.

It is in these extreme cases that peculiar alterations of the epithelial cells are sometimes found. In several instances we have observed areas in which the epithelium was enormously swollen so as to practically obliterate the lumen of the alveolus. These large irregular cells no longer preserve the columnar form, but are shapeless masses of finely granular protoplasm which takes an intense pink stain with the eosin and in which the nuclei are also irregular in form and size and stain very deeply, almost black, with the hematoxylin. Usually one or two alveoli only show such a change in their epithelium, or there may be only a few cells of this form intercalated among others of the usual type in the alveolar wall, but sometimes over considerable areas all the alveoli are packed with such cells. Their significance is far from clear. Much more frequently there are found cells among the ordinary epithelial cells of the alveolar wall which are greatly enlarged but the protoplasm of which retains the characters seen in the rest of the cells and contains only a scant basophilic granulation. The nuclei of such cells are usually much enlarged and vesicular, with scattered chromatin granules.

The colloid varies greatly in different cases, but it seems that in most of the more severe cases it is markedly diminished in amount and altered in quality, the normal hyaline material being replaced by a very palely staining substance or by a ragged, shreddy, granular or vacuolated mass which has no longer the refractive qualities of the normal colloid. There are some cases, however, in which there is a great deal of fairly normal looking

colloid, and this is especially true of those instances in which the hypertrophy of the epithelium is relatively slight: cases, that is, in which the process is apparently advanced, at least as far as the thyroid is concerned. On the other hand, when the colloid is greatly diminished, one rarely fails to find severe symptoms, and when the symptoms are very indefinite or in part absent it is usual to find a good deal of colloid.

The most interesting cases in this connection, then, are those in which intense symptoms exist, but in which, at the same time, the alveoli contain a large amount of colloid. There are at least twelve of these cases in our series, and although in some of them one may explain the existence of such large alveoli full of colloid, on the idea that the exophthalmic symptoms are associated with changes which have appeared in a gland already the seat of alterations such as are seen in a colloid goiter, still there remain many in which there is no evidence of such a previous goitrous change. From this it appears that the presence of quite abundant colloid is not inconsistent with the development of intense symptoms, although in most cases in which the symptoms are intense the colloid tends to disappear with the advance in the alterations in the gland. It is not improbable that the amount of colloid may bear a fairly constant relation to the stage of progress of the disease, and light may be thrown on this by the consideration of the tissues removed at successive operations. One can distinguish, however, different types of change in the thyroid in different cases, for while in one group the alveoli are not larger than normal, show elevation and folding of the epithelium and are full of colloid, another group with quite as intense symptoms will present thyroid tissue composed of very large alveoli full of colloid in which, nevertheless, the folding of the epithelial layer is most complicated. A third group comprises those cases usually milder in their course in which the alveoli are large and full of colloid, but in which the alveolar epithelium is almost flat, except in certain foci or in portions of some of the alveolar walls where it becomes cylindrical and thrown up into folds. Several of the cases in which extirpation of the thyroid was carried out with good results for the relief of indefinite symptoms, such as the combination of goiter with tremor only or with moderate tachycardia only, showed in the thyroid abundant colloid in large alveoli which are hardly at all irregular, but, nevertheless, in places show areas of epithelium which has become high and cylindrical and which is beginning to project prominently into the alveolar lumen.

Finally, in a few of the cases in which the symptoms were reduced to nervousness or slight tremor with goiter, the excised tissue shows the normal structure or that of a circumscribed adenoma. There were six of these cases which should be ruled out of the series.

The focal nature of the alterations in the thyroid is especially interesting and may be recognized in some cases in the fresh cut surface of the gland by the opacity and granular surface of the altered areas which contrast with the surrounding tissue. Apparently this, too, represents a stage in the development of the lesion, and in most of the six cases which show it the symptoms had existed only a short time before the operation. Microscopically the altered areas are quite sharply demarcated from the rest and may involve a great number of alveoli or be limited to very small foci, including only a few alveoli here and there. It is difficult to understand why the lesion should appear thus in certain areas only.

In sixteen of the cases there were found on cutting through the thyroid rounded circumscribed nodules which projected above the general level and differed in consistency and general appearance from the rest of the gland. These are the adenomatous nodules which constitute a considerable portion of ordinary goiter, and hence they are by no means peculiar nor characteristic of the changes in exophthalmic goiter. They are most commonly finely granular and opaque, occasionally flecked with yellow patches of necrosis or with hemorrhages, and on section they are seen to be composed of small round alveoli lying quite separate from one another in an abundant loose stroma and lined with cubical epithelium. In only a few of our cases did the alveoli, which make up such embedded nodules, show the folding and other hypertrophic changes which characterize the tissue round about, but in one case in which exophthalmic symptoms were well marked these changes were limited to the tissue forming such a circumscribed nodule. In another case the hypertrophied tissue was found to form the thick lining of a cyst.

The second type of circumscribed nodule is that which is composed of a tissue very rich in colloid and correspondingly translucent. The central part is often occupied by a cyst-like cavity filled with a greenish glutinous fluid. Such nodules show microscopically very large alveoli more or less radially arranged and distended with colloid. The amount of fibrous tissue traversing the gland varies in different cases, sometimes occurring in coarse bands that separate the tissue into lobules, while in other cases there are, in addition, fibres which separate the individual alveoli.

In six of our cases it was possible to study the thyroid at different stages in the progress of the disease, either in tissue removed at two different operations or at autopsy in patients who died some time after the operation. No very constant results were obtained. In four of the cases, in which the intervals between the times of obtaining the two specimens were seven months, eighteen months, forty-five days and seventy-nine days, the tissues were practically identical in the two portions examined. In the

fifth case, after a lapse of nine months, the tissue from the second operation showed that the epithelial cells had become greatly increased in height and the colloid rather more abundant. In the case in which the longest interval elapsed between the operations, two years and six months, the alveoli had changed from small compact almost solid masses of epithelium with inconspicuous lumen and no colloid to large ramifying spaces full of ragged colloid and lined with very high cylindrical epithelium.

Thus in these cases there is no tendency in the thyroid toward a return to the normal, nor should we expect it, since the second portion of tissue was obtained either after death in cases in which the symptoms had persisted or at an operation undertaken because of the persistent symptoms. It will be extremely interesting to investigate the thyroid in one of the cases in which amelioration or cure of the disease has followed partial excision, if opportunity ever presents itself.

In this connection, too, those cases seem important in which the symptoms of exophthalmic goiter have gradually given place to those of myxedema with atrophy of the thyroid.

In nearly all the typical cases there are scattered about, usually in connection with the fibrous strands, masses of lymphoid tissue which are sometimes large enough to be conspicuous, opaque white dots visible in the fresh specimen. In one instance in which there was a cyst the numerous lymphoid nodules shone through the wall of the cyst very distinctly. In some cases they are small and indefinite in outline and are composed of an irregular accumulation of lymphoid cells. Generally, however, they are well-formed lymphoid nodules with very distinct germinal centers, composed of concentrically-arranged cells with abundant protoplasm. It seems probable that this increase in the bulk of the lymphoid tissue which is practically invisible in the normal gland, is part of the general increase in size of the lymphoid structures of the neck which occurs so often.

This could be studied in a few of the cases at autopsy in which it was found that the lymph glands and hemolymph glands were enlarged, especially in the neck, but also in the thorax, abdomen and retroperitoneal region. The superficial glands are usually not so much enlarged, but the lymphoid tissue in the pharynx, the tonsils and the nodules in the tongue become very conspicuous. Microscopically it is found in all these places, as in the lymphoid nodules of the thyroid itself, that there is a great increase in the lymphoid cells, but also that the germinal centers become very large and sharply outlined and contain many actively phagocytic cells. The sinuses are usually filled with wandering cells. This change in the lymphoid tissue has the appearance of being a reaction to the absorption of some poisonous or injurious material, but whether this material stirs up the thyroid also to proliferation or is itself the product of the overactive thyroid is difficult to say.

The thymus, too, has been found by nearly all investigators to be enlarged. There are not only the usual scanty remains, but the mass of tissue is frequently seen to be as large or larger than that seen in a child before retrogression has taken place. Histologically it has the same appearance as in those earlier years, and the same processes of phagocytosis are seen to be going on. The recent statements as to its epithelial nature make this change in the thymus especially interesting and deserving of more attention than has been accorded it, particularly since there have been some favorable results from the administration of thymus extract in this disease.

The parathyroid glands are sometimes to be found attached to the portion of the thyroid extirpated at operation, even when the greatest care is exercised to preserve them. In other instances they were found at autopsy, and altogether we have had the opportunity of studying them in sixteen cases. They were practically normal in all cases. The cells of all varieties found in the normal gland were seen in these, too, in the usual proportions. In six of the cases the notes state that there was an increase in the fibrous stroma, and renewed examination of these glands shows that there is in some cases a network of scar tissue running through the tissue, just as has been seen in the thyroid in so many of these cases. Otherwise, however, the tissue in these glands seems abundant and normal. On the whole it seems improbable that the parathyroids have anything to do with the production of the symptom-complex of exophthalmic goiter when we compare these very slight anatomic lesions with the advanced changes in the thyroid.

Much attention has been devoted to the study of the cervical sympathetic ganglia and nerves, since the idea is held by many that changes in those structures are really at the bottom of the whole disease, but the results of these studies have been very unsatisfactory; some authors have described atrophy of the cells, increase in the pigment or overgrowth of connective tissue, but quite as many or more have found the ganglia perfectly normal. We have studied them carefully in two cases and have found no pathologic alterations, unless the presence of a number of shrunken deeply-stained ganglion cells in one section can be regarded as pathologic. This ganglion was fixed in formalin and the one from the other side in alcohol. In that one no such changes were found, so that I am not disposed to attach much importance to them.

Similar results have come from the anatomic studies of the central nervous system, for while in some cases atrophy or destructive lesions have been found in the corpora restiformia, and in others hemorrhages in the medulla, the majority have shown no abnormality, and at best the lesions must be regarded as extremely inconstant.

As to the hypothesis cerebri, there seems to be few recorded observations. Häming studied it in nine cases and found it quite normal, although in several of the cases the number of chromophile cells were striking. In the one case in which we have secured the hypophysis its tissue was normal.

Of pathologic alterations in other tissues and organs so little is known and the findings are so inconstant that they may well be passed over.

On the whole, therefore, the only lesions in this disease which are palpable and constant are those of the thyroid and of the lymphoid apparatus and thymus. All of the others are so indefinite and so often completely missed that it is difficult to convince oneself that they play a primary rôle in the disease.

From what has been said it is seen that with the appearance of definite symptoms of exophthalmic goiter there is always the same change in the thyroid. In very mild and definite cases it may be possible to find only the beginning of this change in some part of the walls of some of the alveoli. In more severe cases in the early stages the change in the thyroid may be in foci only, while the rest remains normal, but in the more advanced cases the typical change with proliferation of the epithelium and folding of the walls of the alveoli is invariably found. None of our cases came from goiter regions, although one or two had goiters before the exophthalmic symptoms developed. Even in these it is only necessary to look far enough to find the changes described above superimposed on those of the old goiter. Sometimes in nodular goiters only the intervening tissue shows the hypertrophy well, but in other cases that of the adenomatous nodules will also show it. From this series of cases we are quite convinced that this change in the thyroid in a more or less complete development is quite constantly associated with the symptoms of exophthalmic goiter.

Now this is anatomically the change produced in compensatory hypertrophy when we excise part of the normal gland, but that compensatory hypertrophy never produces a mass of tissue in excess of the normal and no symptoms result. It is the same change, too, that we find in sheep and dogs, sometimes with very marked enlargement of the thyroid, but these animals show no definite symptoms, or if they do they are rather the symptoms of myxedema (Marine). There can not be a complete analogy, then, between these lesions. In exophthalmic goiter there must be something more than the mere hypertrophy of the thyroid, either in the nature of its secretion or in some other factor quite aside from the thyroid. Nevertheless, it is certain enough that the thyroid is hypertrophied and the current opinion is that it is functionally overactive and producing an excess of secretion. This, however, remains to be directly proven, and Oswald, in opposition to the general view, believes that we really have there a condition of

thyroid insufficiency, since the gland is often nearly empty of colloid and contains relatively little iodine-holding secretion. But the removal of part of the thyroid improves the symptoms of the disease, and the administration of thyroid extract makes them worse, so that we are almost forced to the belief that the excessive activity of the thyroid is at fault.

The great question seems to remain: if the gland is hypertrophied and overactive, what has caused this hypertrophy? The symptoms of exophthalmic goiter are so like those of artificial thyroidism that it is fairly easy to believe that there is this excessive activity and that the other symptoms depend on the outpouring from the thyroid. But we have no examples elsewhere of the spontaneous hypertrophy and overactivity of an organ to the detriment of the rest of the body. Always it is a work hypertrophy or compensatory hypertrophy, but here the inconsistency appears that when you excise part of this hypertrophied gland the symptoms often disappear.

Is it possible that the fundamental underlying cause is some infection, such as influenza, which, reaching the thyroid through the pharynx, sets up such a non-suppurative thyroiditis as has been described by de Quervain, destroying many of the cells and leaving scars through the gland, after which the remainder becomes hypertrophied and its activities perverted? Gilbert and Castaigne, Reinhold, Breuer and others describe such a course of events, and, indeed, a history of pharyngitis or grippe is very common as a forerunner of this disease. It is still rather hard to comprehend the overstepping of the normal to such an extent in the process of compensatory regeneration, and the production of a harmful organ by a mechanism which usually restores to normal with such precision.

The relation of iodine to this disease is interesting, for while in a normal person the symptoms of iodism do not very closely resemble those of exophthalmic goiter, it is claimed by Breuer that in cases of exophthalmic goiter the symptoms may be made much worse or latent symptoms called out by administration of iodids.

Further, the suggestion may be offered that it is possible, since some of the symptoms are generally referred to disturbances of function of the cervical sympathetic system, that the vasoconstrictor influence of those ganglia over the thyroid may be diminished and that a consequent hyperemia of the gland may finally bring about an overactivity. Attempts to study this experimentally by the isolation of the thyroid from all nervous connections, even those which are closely bound up with the vessels, have so far led to no result.

Since the most palpable and constant change in this disease is after all in the thyroid, it seems that our efforts to explain the

disease must start with the explanation of the disturbances in structure and function of the thyroid. We must know definitely whether it is pouring out an excessive secretion into the circulation; we must be able to recognize that secretion and estimate its amount and its toxic character. Then we must learn surely whether the thyroid is doing this independently or whether it is in response to some disturbance in metabolism elsewhere. It seems possible even that it might be in response to a demand only for some other associated substance which brings with it the toxic substance, so that while the thyroid hypertrophies to meet a justifiable demand it incidentally produces a noxious substance in excess.

At all events, we must learn the underlying cause of these changes and not be content with discovering which organ is most disturbed, for only in that way can a perfectly rational therapy be devised.—*Journal of the American Medical Association*, Oct. 5, 1907.

THE DIAGNOSIS OF EXOPHTHALMIC GOITER.*

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THE part assigned to me in this symposium is the diagnosis of this remarkable disease. What I shall have to say is based (1) on an analysis of the cases which have occurred in my wards at the Johns Hopkins Hospital during the past two years,¹ and (2) on a study of the bibliography of the subject.²

It will be convenient to discuss (1) the character and significance of the individual signs and symptoms; (2) the diagnosis of the clinical syndrome, especially in its less obvious forms; (3) certain points in differential diagnosis, and (4) the diagnosis of the indications and contraindications for surgical interference.

On account of the necessity of brevity I am forced to limit the discussion to the features which I regard as most essential.

I. THE CHARACTER AND SIGNIFICANCE OF THE INDIVIDUAL SIGNS AND SYMPTOMS.

Besides the three cardinal symptoms—struma, tachycardia and exophthalmos—there are a very large number of other symptoms

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1. I have to thank Drs. Roger Morris and Benson A. Cohoe for help in the analysis of the material.

2. Especially helpful articles are: Moebius (P. J.): *Die Basedow'sche Krankheit*, Wien, 1896; a new edition has recently appeared with a very full bibliography. Busehan (G.): *Die Basedow'sche Krankheit*, Eine Monographie, 8., Leipzig u. Wien, 1894. Kocher (A.): *Ueber Morbus Basedowi*, Mitt. a. d. Grenzgeb. d. Med. u. Chir., Jena, 1902; ix, 1-304. Dock (G.): Clinical observations in exophthalmic goiter. *Am. Med.*, Phila., 1906, xi, 271-281. Kocher (T.): A contribution to the pathology of the thyroid gland, *Brit. Med. Jour.*, Lond., 1906, i, 1261-1266.

and signs to be considered, some of them more important than the exophthalmus as diagnostic aids because more frequent and characteristic.

(a) *The Struma or Goiter.*—The thyroid gland is enlarged in the majority of cases of the disease. Since we have been taught how to recognize slight enlargements, the reports of exophthalmic goiter without goiter have grown fewer, and some go so far as to deny the existence of an exophthalmic goiter without struma. It does exist, however. In twenty-one of my cases a struma was recorded in the notes dictated at the ward rounds in eighteen. The whole gland is, as a rule, uniformly involved, giving rise to the well-known horseshoe-shaped projection, but one lobe may be larger than the other. The struma is not large as a rule; the patient may even not have noticed the thickening of the neck. The isthmus of the gland is usually broadened and thickened and the pyramidal lobe is enlarged. The consistence varies according to the stage of the disease and according to the acuteness or chronicity of its course. At the beginning and in cases running an acute course it is often softer than normal; later on, and in chronic cases, the consistence is firmer and more elastic. A characteristic feature is the granulation of the surface, usually easily recognizable on palpation and due to the lobular hyperplasia. Most important, from the diagnostic standpoint, are the vascular peculiarities of the goiter. The typical struma in exophthalmic goiter is always a struma vasculosa. The telangiectasis is recognizable (1) by the visible pulsation of the goiter, (2) in many instances by the palpable systolic expansion, (3) by the palpable thrill, and (4) by bruits audible at the point of entrance of the thyroid arteries (especially the superior) into the gland. The struma, though usually recognizable by the educated touch of the physician's finger early in the disease, is mentioned by only about one-fifth of the patients as preceding the other symptoms.

(b) *The Tachycardia or (better) Pycnocardia.*—In the semi-otic trinity the increased frequency of the heart beat is the most constant and most important sign. The pulse rate is practically always over 90 and may exceed 200 beats to the minute. A rate between 110 and 150 is very common, and the patients usually notice subjective palpitation; sometimes they complain of it bitterly. In my experience this exquisite thyreotoxic phenomenon is usually continuous and persistent. In a few cases, however, I have seen it irregularly or intermittently present. In one it was always precipitable in the early part of the disease by psychic influences and became continuous later. Very rarely pycnocardia is absent when other signs of the disease are present, and then, as Dr. Emerson has shown, the sign may sometimes be brought out by the administration of a few doses of thyroid tablets.

(c) *The Exophthalmus.*—This sign is the most striking of all

to the casual observer when it is present. It is entirely absent in about one-third of the cases, and even in many of the other two-thirds it may be so slight as not to attract attention. It is necessary to distinguish between apparent exophthalmus due merely to widening of the palpebral fissure and true protrusion objectively demonstrable as a shortening of the distance between the supra-orbital margin of the frontal bone and anterior pole of the eyeball (measurement with exophthalmometer). The former is, as a rule, a more important factor in the changed facial appearance than the latter. The prominence is usually bilateral and continuous; it may be unilateral and the intensity may vary from time to time.

(d) *Phenomena Pertaining to the Muscular System.*—The tremor noted by Troussseau and Charcot really ranks in diagnostic importance along with the pycnocardia and the struma; it is so frequently present that one inclines with Marie to designate it as a fourth cardinal sign. The tremor is rapid and vibratory, there being as many as eight to ten oscillations per second, in marked contrast with the slow tremor of paralysis agitans. It is best seen by asking the patient to hold his hand with widespread fingers between the observer and the light. The tremor may be limited to the extremities, but frequently involves also the muscles of the neck and trunk. It is not exaggerated by voluntary movement, but is increased by psychic excitation. Paresis, paralysis or atrophy are occasionally seen. In how far they are related to the fatty change in the muscles described by Askanazy is not known. Sudden "giving way of the legs" may be an early symptom.

(e) *Phenomena Pertaining to the Digestive Apparatus.*—Diarrhea and vomiting, both without apparent cause, are not infrequently troublesome symptoms in advanced stages of the disease. They are rare, however, at the beginning and are, therefore, of little help for diagnosis. Other abnormal phenomena, noticeable in the digestive apparatus, are too rare and inconstant to be of much diagnostic value.

(f) *Phenomena Pertaining to the Respiratory Apparatus.*—Here dyspnea is the most important phenomenon. It is usually a late symptom, present in relatively few cases, and generally cardiac in origin.

The respiratory curve as recorded by graphic methods is flattened (Hofbauer). The lessened expansion of the thorax (Bryson's sign) is probably due to weakened muscles and is of no special diagnostic importance.

I would call attention to air-hunger and the peculiar fruity odor of the breath occasionally present in advanced cases; these are important, not for the diagnosis of the disease itself, but as indicating the existence of acidosis, which may call for an immediate therapeutic effort.

(g) *Phenomena Pertaining to the Urogenital Apparatus.*—

Here there are no constant findings. Polyuria, glycosuria, transient albuminuria are only occasionally met with. The urea-nitrogen, the total nitrogen, the uric acid and the phosphates of the urine are increased corresponding to the accelerated metabolism in this disease. A diminution of the menstrual flow is a very common accompaniment of exophthalmic goiter in women. The breasts occasionally show changes, usually of rejuvenation.

(h) *Phenomena Pertaining to the Circulatory Apparatus.*—The pycnocardia, the most helpful of the signs for diagnosis, has already been mentioned. But the heart shows other changes also. The heart sounds are strongly accentuated, and accidental systolic murmurs, due to the excited and accelerated action of the heart, are frequently audible both at apex and base. The right ventricle appears to be especially affected, and its excited action can be recognized by palpation to the left of the sternum. In advanced cases the heart is not infrequently dilated. The cardiac condition varies with the intensity of the thyreointoxication, and is a valuable criterion for judging of the latter.

The radial pulse is usually small and quick. Arrhythmia is rare except in advanced cases or where the heart is otherwise diseased. The maximal arterial pressure varies. It is sometimes low, but more often higher than normal, and occasionally very high. The pulse pressure (difference between maximal and minimal pressure) may be large, indicating a large systolic output from the left ventricle. When this is borne in mind, along with the great increase in the heart rate, one begins to realize the amount of work done by the heart in this disease.

Throbbing of the carotids and of the abdominal aorta is a sign frequently present, and one of considerable diagnostic import.

Slight edema of the legs, hands or eyelids is common.

The blood shows no constant alterations, though a relative increase in the mononuclear white elements has been noted by some in the differential count.

The slight enlargement of the lymph glands of the neck so constantly seen at operations is only rarely demonstrable clinically by palpation.

(i) *Phenomena Pertaining to the Nervous System, Sense Organs and Skin.*—Both the cerebrospinal and sympathetic nervous systems are profoundly affected in the disease, the involvement of the autonomic systems, especially the bulbar, being perhaps most marked. It is surprising how many of the phenomena pertaining to the other parts of the body may conceivably be brought into relation with disturbances of the autonomic neurone-systems.

The psychic manifestations are often pronounced and may be the first to excite suspicion as to the diagnosis. Feelings of restlessness and discomfort, an indefinable anxiety or apprehension without cause and rapidly alternating moods are very character-

istic. One of my patients gradually became so irritable and violent that his wife, not knowing the cause, had him before a magistrate and bound over to keep the peace. Another became so anxious and disturbed that she lost confidence in herself and had to be sent temporarily to a closed institution pending the passing of the psychosis. Even hallucinations or persecutory ideas may develop. Insomnia is frequent and headache also. Vertigo is less common, delirium rare. Pains in the neck or jaws, and shooting pains in various parts of the body are occasionally complained of. A subjective sensation of heat in the body, independent of fever or of the external temperature, is a common symptom. At the beginning of the disease a feeling of weakness, so strong as to interfere with work, is present in many cases; easy fatigability, in young people especially, should excite suspicion.

The eye signs are among the most interesting. The pupils are usually equal and react to light, though with unilateral exophthalmus one pupil may be larger than the other. Aside from the exophthalmus and widening of the palpebral fissure, the most important signs here are (1) the failure of the upper eyelid to follow the eyeball normally in looking downward (v. Graefe); (2) the retraction of the upper lid on straight-forward vision, revealing some sclera above cornea (v. Stellwag; Dalrymple); (3) the infrequent and incomplete involuntary winking (v. Stellwag); and (4) the inability to hold the eyes in the position of convergence (Moeblins). Other signs such as (5) the difficulty of everting the upper lids (Gifford); (6) the pigmentation of the upper lids (Jellinek and Rosin); (7) the failure of the forehead to wrinkle on looking up (Joffroy); (8) epiphora or overflow of tears; (9) the tremor of the eyeballs; (10) the subjective feeling of pressure behind the eyes (A. Kocher); and (11) abnormal dryness of the eyes, are occasionally met with. These signs, dubbed "fancy signs" by my colleague, Dr. Thomas, who fears a neglect of the cardinal tetrad through a search for the novel, are not without their diagnostic value; the presence or absence of all eleven may be determined in a few moments and a clue quickly gained to the unraveling of a condition which might, otherwise, easily escape detection.

The organs of hearing, smell and taste rarely present abnormal symptoms or signs. In the integumentum commune, however, important phenomena are observable. The skin is nearly always smooth, delicate, thin and moist. Sweating is constant and troublesome in a majority of the cases and accounts for the well-known increased electric conductivity of the skin (Vigouroux's sign). Vasomotor instability in the skin is a prominent feature, and the physician when making his first physical examination of the patient is often struck by the blotchy erythema of the neck and upper chest. Pigmentation is the other most important cutaneous

sign, the color of the skin may resemble that seen in pernicious anemia, or it may approach that of Addison's disease. The nature of this pigmentation may perhaps not be understood until we are better informed regarding the chromaffine systems of the body. Falling of the hair is more common than prematurely gray hair (canities prematura), though both are met with.

(k) *Phenomena Pertaining to the General Metabolism.*—Clinicians have long since noticed the marked tendency to emaciation despite liberal feeding in exophthalmic goiter. A loss of from 20 to 50 pounds in weight during a short period is not uncommon. The body-weight curve is important as a clue to the speed of the metabolic reactions, and thus for judging of the intensity of the disease. The metabolic disturbance consists of an acceleration of the oxidative processes (Fr. Müller; Magnus-Levy); in doubtful cases in hospitals a determination of the oxygen intake and of the CO₂ output by the Zuntz-Geppert method is a diagnostic aid, though it is too inconvenient for use in private practice.

The occurrence of mellituria in the disease has already been referred to. Slight fever was noticed in several of my cases. Whether or not such fever is due to a disturbance of heat-regulation, which is a part of the disease proper, is not known. It may depend on complications.

II. THE DIAGNOSIS OF THE CLINICAL SYNDROME, ESPECIALLY IN ITS LESS OBVIOUS FORMS.

The diagnosis in typical cases of the well-developed disease could scarcely be overlooked except by an untrained or superficial observer. The coexistence of pycnocardia, struma and tremor, with or without exophthalmus, are decisive. It is in the beginning of the disease and in the atypical cases, including the so-called *formes frustes*, that some difficulty may be encountered. Once the clinician, however, has learned to recognize a beginning struma vasculosa, and to realize the significance of the so-called hyperthyreotic equivalents, especially the thyreotoxic form of the goiter-heart, the thyreotoxic neuropathic and psychopathic states, and the thyreotoxic acceleration of oxidative metabolism, he will rarely be left in doubt. It may in some instances be possible to unmask a latent hyperthyreoidism by the administration of a few doses of iodothyrim or by a Zuntz-Geppert estimation. It should be borne in mind that nearly all the phenomena of hyperthyreoidism are accentuated somewhat by the recumbent position; this may explain why the patients so often feel worse in the morning than after they have been up and about during the day. It is unusual, even in the mildest forms, not to get at least some hint from the eyes, if the various tests be run through.

III. CERTAIN POINTS IN DIFFERENTIAL DIAGNOSIS.

A few words must be said concerning the differential diagnosis as regards (a) strumata, (b) goiter-hearts, (c) exophthalmus, (d) thyreotoxic pseudochlorosis, and (e) the conditions underlying hyperthyreosis and accounting for it.

(a) *Strumata*.—(1) Not every acutely developing pulsating struma is an exophthalmic struma; (2) the symptoms of exophthalmic goiter may become superimposed on an ordinary colloid struma, in which event the thyreotoxic symptoms appear to be mitigated (*goître Basedowijé* of Marie, *struma Gravesiana colloidés* or *struma Basedowijcata* of Kocher).

(b) *Goiter-hearts*.—It seems tolerably clear that the goiter-heart of exophthalmic goiter is a thyreotoxic phenomenon. With Friedrich Müller, I can see no reason for separating from it the milder forms of the thyreotoxic heart (*Kropfherz* of Kraus; *Kardiopathia thyreogenes levis* of His). There is every transition from the conditions in which they occur to the outspoken state. There is force, however, in the argument that the cardiopathies due to the mechanical effect of a goiter (Minnich) be separated from the thyreotoxic goiter-heart. Thus (1) disturbances of the heart due to strumata extending through the superior aperture of the thorax (Kocher), (2) the goiter-heart due to mechanical injury of the venous circulation (Rose's goiter-heart), and (3) that due to interference with respiration (dyspneic goiter-heart of Kocher), would come in this class. Though thyreointoxication may play a secondary part in such cases, it is the diagnosis of the mechanical injury that is all important and should guide the therapy.

(c) *Exophthalmus*.—It is usually easy to distinguish the exophthalmus of this disease from other forms of exophthalmus, but mistakes are sometimes made. Protrusion of the eyeballs due to the increase of intracranial pressure (especially in hydrocephalus), to aneurism, sinus thrombosis or abscess (unilateral exophthalmus), or to retrobulbar growths, especially chloromatous masses (Dock) should be remembered. An acute recurrent exophthalmus due to angioneurotic edema has also been described (Gruss).

(d) *Thyreotoxic Pseudochlorosis*.—Wunderlich observed protrusion of the eyeballs in anemic-looking girls. This is often associated with pallor, fatigability, emaciation and accelerated heart action. It was supposed to be due to chlorosis, and the goiter is mentioned in medical writings as a struma chloroticum. Blood examination shows, however, the presence of a normal or excessive amount of hemoglobin, and such patients are doubtless affected with true exophthalmic goiter (Fr. Müller). When they begin to lose weight, to have slight fever and to sweat freely the suspicion of pulmonary tuberculosis may be aroused. Dr. A. D. Atkinson, of Baltimore, recently showed me such a patient: a rapid tremor,

a pycnocardia, a suggestive v. Graefe's sign, a normal blood-count and slight enlargement of the thyroid gland helped to make a diagnosis of hyperthyroidism certain.

(c) *Conditions Underlying Hyperthyreosis.*—Though it is now possible for us as internists to recognize hyperthyroidism in its very early stages, we realize fully that we are far from understanding the causes of the hyperthyreosis. Hyperthyreosis, like jaundice or fever, may be excited by different causes, and we must from now on try to make out the varying etiology, be it toxic, infectious, reflex, obscure, metabolic or still other in nature. In one case recently reported a hyperthyroidism developed as a result of a metastatic endothelioma in the gland. This raises the questions concerning the justification of the terms "Basedow" and "Pseudobasedow" (Buschan) and of "essential" and "symptomatic" exophthalmic goiter (Moeblus), questions which can not well be answered until we have further knowledge.

IV. THE DIAGNOSIS OF THE INDICATIONS AND CONTRAINDICATIONS FOR SURGICAL INTERFERENCE.

An important part of the physician's function lies in the diagnosis of the indications and contraindications for surgical interference. Formerly surgery was resorted to only after non-surgical treatment had been given a prolonged trial without success. The brilliant results of surgical treatment in the earlier and milder forms of the disease (Halsted, Horsley, Kocher, v. Eiselsberg), make it incumbent on medical men to consider operation early and seriously. Though nearly all patients improve on rest, a diet which does not stimulate the thyroid (milk), sodium phosphate and fortnightly X-ray exposures, and although occasionally a patient will get well, very many go backward again as soon as treatment is discontinued. In the very early cases surgery is capable of curing nearly 100 per cent.; even in the outspoken cases almost 75 per cent. can be cured by operations judiciously planned and skilfully performed, and the mortality, now about 5 per cent., can be further reduced. Internal medicine up to this time has been utterly unable to obtain results comparable with these. In the present state of knowledge and practice, therefore, once a positive diagnosis of exophthalmic goiter has been made, it is, in my opinion, the physician's duty and privilege to recommend operation early. I do not say that every patient presenting the v. Graefe phenomenon or an irritable heart should be operated on, but when a persistent pycnocardia associated with a vascular struma has been discovered, or whenever the grouping of symptoms is such as to leave no doubt of the existence of a persisting thyreointoxication, medical treatment, unless markedly beneficial, should not be continued long before operation is advised. The only contraindi-

cations in uncomplicated cases are a feeble heart with very high pulse frequency or pronounced psychic excitation; when these are present a brief preliminary medical treatment may be necessary; if the serious symptoms persist in spite of it and indicatio vitalis exist, the dangers should be pointed out and operation resorted to.

And just here a heavy responsibility rests on the physician. Fully as important as the diagnosis of the indication for operation is the choice of the surgeon. The physician should select an operator thoroughly familiar with the anatomy and pathology of the thyroid and para-thyroid glands and skilled in the special technic required. Success depends so largely on the formation of a correct judgment as to the amount of the gland to be removed and as to its removal in one or several operations, that the physician must be sure of his surgeon. Aside from the dangers of tetany, if too much gland is removed, hypothyroidism will result and the patient be doomed to thyroid-eating or an implantation; if too little (a less serious matter) more of the gland can be taken out later. One thing seems established, that in exophthalmic goiter the symptoms retrogress in exact conformity with the amount of thyroid extirpated.

At present there is a fair prospect that the treatment of the disease may again be transferred from the surgeons to the physicians. The remarkable results already obtained in a number of cases by Rogers and Beebe through the use of their curative serum give us good reason to hope that a method will ultimately be perfected which will permit the internist to accomplish with his needle what he now asks the surgeon to do with the knife.—*Journal of the American Medical Association*, Oct. 5, 1907.

MEDICAL TREATMENT OF EXOPHTHALMIC GOITER.*

ROBERT B. PREBLE, M.D., CHICAGO.

A correct estimation of the value of any plan of treatment of a given disease is easy or difficult, possible or impossible, in direct proportion to the closeness with which the disease follows a type. If the disease is acute and typical, the therapeutic value of any measure is readily determined; but if, on the contrary, the course of the disease is chronic and subject to the many spontaneous remissions and exacerbations, it is nearly impossible to reach a just estimate of the value of any plan of treatment. When, in addition to these characteristics, the pathologic phenomena are not sharply separated from physiologic processes, the difficulties

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opposed to correct judgment are further increased. 'There is perhaps no disease, the history of which better demonstrates the truth of these principles, than does exophthalmic goiter. An almost unending list of plans of treatment might be prepared and in regard to each the opinions of their value have varied from useful, through useless, to harmful.* And to-day, although there are many reasons for the belief that we are at last approaching an adequate conception of this disease, there still reigns the greatest chaos in its treatment, and so far as I can see there will continue to be great diversity of opinion on the subject until our knowledge of its pathology, and particularly of its etiology, becomes more complete than it is at present.

It is difficult, indeed impossible, to even sketch the various things which may be done for the patient in the time allotted, and it is not likely that it would prove to be profitable. It, therefore, has seemed best to make an effort to group the various plans as follows:

1. Those directed toward the correction of the neurosis, which is believed by many to lie back of and to cause the alteration in the functions of the thyroid gland.
2. Those which are directed toward counteracting the perversion of the thyroid secretion.

There is much collateral evidence in support of the idea that fundamentally this disease is a neurosis, and independently of whether this is true or not, a very considerable proportion of the patients must be or are, at least for a time, best treated along these lines.

One of the most important and constant of the symptoms is the increase in tissue waste, a fact which immediately suggests the advisability of rest and of abundant proper nutrition. The degree of rest required varies in different patients and in the same patient from time to time, and ranges from absolute and prolonged rest in bed to a mere restriction of activities. The rest should be both physical and mental. In many instances this rest, particularly the mental rest, can be best obtained if the patient is in hospital or sanitarium. In other instances, however, the opposite is true, just as in some cases a certain amount of work may be permitted. It is not possible to give more than the most general suggestions on these points, and much must be left to the judgment and good sense of the physician in charge. The better his suggestions are adapted to the individual case and her surroundings, the more satisfactory the results will be.

So, too, in regard to the diet, thought and care are necessary. The circumstances, tastes and digestive powers of each case must be consulted. In some cases forced feeding is required, while in others the usual amounts of food are sufficient.

The influence of climate is often important and many cases

are greatly benefited by a change. Just what change should be advised can not be stated, for, while some cases are improved by a trip to the mountains, others receive greater benefit from a trip to sea-coast or an ocean voyage. If the cardiac symptoms are marked, high elevations should be avoided; and, if the patient goes to the seashore, surf bathing should be forbidden. And, wherever the patient goes, quiet, rest and good food are absolutely essential.

These general hygienic and dietetic suggestions, suitable under all circumstances and to all cases, may be combined with various other measures, such as baths, massage and electricity.

Baths of various sorts and kinds have been very enthusiastically advocated by those whose interests are centered in hydrotherapeutic methods and institutions, but, when sufficient allowance is made for this enthusiasm, there is not much left to say in their favor.

Various forms of the electric current have been extensively employed; some advocate galvanism, some faradism, some the static current. There is much diversity of opinion as to their value. But it is probable that no one of them has other than a suggestive influence, and it should always be kept in mind that the exophthalmic patients are extremely susceptible to suggestion. This is well illustrated by the statement of Moebius to the effect that anything is of value, providing only that the patient is led to think that it is.

More recently some use has been made of the X-ray. Some have reported most favorable results from this method, while others have seen no other effects than a lessening of the activity of the metabolic processes.

Turning now to the question of drugs, one finds an almost unending list which have been employed, and in regard to the value of each one finds wide diversity of opinion. The use of various iron preparations has been advocated and condemned, but the summation of experience is that if there is an anemia, particularly one of the chlorotic type, as there often is, iron is useful, but that it has no direct effect on the fundamental process.

Arsenic is another drug about which much the same may be said as has just been said in regard to iron.

Iodids, the use of which is suggested by the presence of the goiter, have been used by many, and, while their use may be accompanied by a reduction in the size of the goiter, the other and more important symptoms are intensified. This is particularly true in the cases of primary exophthalmic goiter. There are some who have seen patients improve under their use, but in general it may be said that the improvement is in spite of rather than because of. For some reason yet unknown the iodid of potassium

has proved to be more harmful than iodine itself. The use of iodothyrim is to be unreservedly condemned.

Because of the prominence of the cardiovascular symptoms, drugs which influence these have been extensively employed, in particular the digitalis. In regard to the value of this, as of its substitutes, *strophanthus* and *convallaria*, there is the same diversity of opinion noted in regard to all the agents so far mentioned. Small doses accomplish nothing, while larger doses are prone to excite the signs of digitalis poisoning. Many experiences and careful clinicians, however, employ these drugs in cases where there is extreme tachycardia or any of the usual evidences of cardiac insufficiency, such as cardiac dilatation, passive congestion of the liver or edema of the feet.

It has also been natural to endeavor to lessen the extreme nervous irritability of these patients by the use of various sedatives, the bromids in particular having been extensively employed. The bromids of sodium and potassium are the ones usually given, but the hydrobromate of quinine has also been advocated, even with enthusiasm, by some. Opium or its derivatives has been used for years and, except for the dangerous possibility of establishing a drug habit, seems to me personally to be more valuable than other sedatives.

To these, the drugs most often employed, may be added others, such as quinine, antipyrin, phenacetin, salicylates, *veratrum viride*, *aconite*, *cannabis indica*, *strychnia*, nitrites, sodium phosphate.

One is forced by such a review as this, and by the diametrically opposed opinions which have been expressed by equally careful observers as to the value of each of the drugs or methods mentioned, that no one of them has any direct effect on the process and that their beneficial influence is determined solely by the skill and intelligence with which their use is adapted to each particular case.

Another group of preparations which have been used and still are to a limited extent, deserve mention more because it shows the evolution of our ideas as to the essential nature of the disease. This group contains the bodies prepared from various glands having an internal secretion and includes the thyroid, thymus, suprarenals, ovaries and testicles. In regard to all of them one finds favorable reports, but, after reviewing the entire experience, one must conclude that they are all useless, with the exception of the thyroid preparations, which are positively harmful.

Lastly come the preparations which appear to best fit with the current idea that an excessive or perverted activity on the part of the thyroid gland is the essential factor of this disease. This belief, one which I personally share, has led to the manufacture of a number of antitoxic or cytotoxic preparations. While the fundamental idea underlying these is the same, the preparations are of two

different sorts: first, those derived from animals which have suffered thyroidectomy, and, second, those derived from animals to which normal or pathologic glands have been administered. In a few instances the serum of patients with myxedema has been employed, but it is obvious that no extensive use of this is possible. The preparations which have been most extensively used are the milk, either natural or desiccated, from thyroidectomized animals, the antithyroidin of Moeblus, the thyroidectin, *i.e.*, the desiccated blood of thyroidectomized sheep, and very recently a serum prepared by Rogers and Beebe by the use of the nucleoproteid and thyroglobulin from normal and pathologic glands.

It is yet too soon to express a definite and final opinion as to the value of these various so-called specific preparations. The reports so far published are to the effect that most of the cases are improved, a small number are cured and an equally small number are unaffected. Were it not for the apparently well-grounded theories which underlie this work, we would, I believe, be justified in saying that these preparations are as futile as the other methods of treatment which have been outlined, and that the cures and improvements are to be referred to the rest, hygiene and passage of time rather than to the material administered. However, no definite judgment on the question can be reached until more cases have been observed, more time has elapsed, and probably until more perfect sera are prepared.

After this discouraging review of the methods of medical treatment, it would seem as if all cases should be treated surgically, and yet I think that many, possibly a majority of the cases, should continue to be handled by medical methods, for one must always remember that the natural evolution of the disease is toward recovery. I have endeavored to formulate some rules which might serve as a guide to the selection of the cases for surgical treatment, but can not, even to my own satisfaction, go further than to say that medical treatment should be employed in every case until it is seen that, in spite of rest, proper nourishment and hygiene and intelligent effort at the correction of individual symptoms, the patient is steadily getting worse. How long the employment of surgical measures should be delayed must be determined in each individual case, but it is far better to operate earlier than is necessary than to delay too long.

If in a given case the condition is not serious, but in spite of the best of help still remains bad enough to interfere with the usefulness of the individual, partial thyroidectomy should be employed.

The same thing must be said of the resection of the thyroid as has been said of the other methods of treatment—that the results are good or bad in direct proportion to the skill and intelligence with which it is advised and carried out.—*Journal of the American Medical Association*, Oct. 5, 1907.

THE SURGICAL TREATMENT OF EXOPHTHALMIC GOITER.*

ALBERT KOCHER, M.D., BERNE, SWITZERLAND.

OUT of 3,460 operations for goiter performed in Professor Kocher's clinics in Berne up to date, 315 have been done on 254 patients afflicted with exophthalmic goiter, of which I will speak here.

My father, Theodor Kocher, was one of the first to operate on the thyroid gland in this disease, which he always claimed to be caused by hyperactivity of the thyroid. The results of his operations on the gland have been up to date so satisfactory that he has proceeded in very much the same way for the past twenty-five years.

I will say only a few words of other operations. In three excisions of the sympathetic nerve, to which I referred in my paper in 1902, the operations had absolutely no permanent or progressive effect on any symptom of the disease. Another, done two years ago, following an operation on the thyroid gland, merely to influence the persisting exophthalmos, had a directly bad effect, so that plastic operations subsequently had to be done to the more protruding eyeballs. I need, therefore, make no further reference to this method.

Let me now, first of all, speak of the danger of the operation in exophthalmic goiter, which still keeps many a patient and often his physician away from the surgeon. We have had in the last 91 operations on 63 patients not a single death, and, in the whole, we have lost only 9 patients out of 254; that is to say, 3.5 per cent. There is no doubt that this percentage will still be lowered. If we ask why we have had a lower mortality than formerly, the answer is a very definite and short one. It is not only because of our improved technic, but because experience has shown that more prudence and care is necessary for operations in this disease than for the majority of other operations. It is not that in a greater number of cases surgical treatment has been refused, for, on the contrary, we have been able to operate in nearly all, but because we have learned to judge of the gravity of a case and to decide accordingly the extent to which the patient will stand operative measures.

Whereas, previous to my paper in 1902, extensive operations had been done (such as excision of one side and resection of a part of the other side of the gland, excision of one side together with

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ligation of arteries of the other, and ligation of more than two arteries in one session), in the last 100 cases such operations have merely been done exceptionally, and only when we were sure the patients could stand them. Very often we had to begin with the ligation of a single artery, and even this only after a long preparative treatment of the patient.

Let me tell you in a few words what we consider important for every surgeon to know before he attempts operations of this character. Above all, we have to investigate the strength of the heart. In the majority of cases, and especially if the disease has been of long duration or has presented sudden exacerbations, we find the heart dilated. We are then to decide whether or not we have to deal with a compensatory hypertrophy, the result of increased cardiac activity brought about by the tachycardia. If this is the case, the dilatation will be slight and constant, and, what is more important, blood pressure will be increased. This we find in the majority of cases. A systolic blood pressure, even of 1.95 mm. mercury (Riva Rocci), does not forbid operation, but we must be sure that the high pressure is proportional to the degree and constancy of tachycardia. If this is not the case, extreme care is necessary. If we find the blood pressure below normal and the disease highly developed, we must study the condition and especially note the action of the heart after exertion or excitement. Under these circumstances we might find a sudden, very marked dilatation of the heart, irregularity of pulse and a blood pressure which can not be measured with our ordinary methods. These patients must be carefully watched and prepared for operation and, what is more important, they should never be submitted to an immediate extensive operation.

The second point which we have to consider is the degree of the disease at the moment we are asked to operate, and this particularly concerns the degree of intoxication presented by the patient at that moment. Intoxication is evidenced by special symptoms, such as sleeplessness, extreme nervousness, great fatigue, weakness, diarrhea, vomiting and a high degree of tachycardia, with irregular pulse and a very vascular thyroid. A highly vascular gland, with expansile pulsation—that is to say, with dilatation of the capillaries (what we call struma telangiectodes) is a sign of very severe intoxication. We find these symptoms more pronounced in the early stages, especially when there has been a rapid development of the disease. Such symptoms do not warrant an extensive operation, and the patient consequently should be prepared merely for a slight operation.

Of further importance is the examination of the blood in exophthalmic goiter, for through this we are apt to find an answer as to the gravity of the disease. Up to the present time 58 cases have been carefully examined by Dr. v. Steiger, who has done

special work in hematology. In nearly all typical cases of the disease we find an increase in the number of lymphocytes and a decreased number of the polynuclear forms, the total number of leucocytes being normal or rather low. The number of lymphocytes is sometimes absolutely increased, but more often the increase is a relative one. This increase is proportional to the degree of the disease, and if there is no increase of lymphocytes the case is an especially serious one. Only in very early, undeveloped cases and in those of long standing which have improved do we find that lymphocytosis is absent. Some time after operation the numerical proportion of the different forms of leucocytes becomes either normal or nearly so, in accordance with the improvement of the patient. We know very little as yet of the significance of lymphocytosis. That form of lymphocytosis which follows infections must be regarded as a secondary hyperproduction in the lymphoid tissues, damaged by the acute infection. Lymphocytosis, on the contrary, is a primary and specific process and indicates a hyperfunction of lymphoid tissue, probably according to its want, and this can not be merely a local effect, as there is a substitution of the myeloid leucocytes at the same time.

We furthermore know very little of the function of the lymphocytes themselves. Their number is increased in slight or chronic infection, and more especially in intoxication, and we must admit that in exophthalmic goiter an analogous irritation of lymphoid tissue takes place. We know that wherever this irritation takes place lymphoid tissue can form, and it is an interesting fact that in exophthalmic goiter the lymphatic glands in the neighborhood of the thyroid are hypertrophic, and more especially lymphoid tissue and germinal centers are also present in the gland itself, which indicates that the thyroid body is the place of origin of this irritation. We find that this local formation of lymphoid tissue in the thyroid body is present also in early cases, even before there is evidence of lymphocytosis and diminution in number of polynuclear leucocytes in the peripheral capillaries, which latter is the result of the toxic influence on the bone-marrow. After excision of a part of the gland, we also find the lymphocytes diminished, whereas their number increases after ligation of arteries.

It may be seen by this brief statement what important results the examination of the blood may give as to the gravity of a case. The very fact of substitution of myeloid leucocytes by lymphocytes seems to me of further importance. It might explain why an ordinary, even slight infection or intoxication acts so badly on a patient with exophthalmic goiter, because ordinary leucocytosis can not get so far or substitute lymphocytosis. Therefore, the patient's condition may be very bad with a slight infection, or the symptoms of exophthalmic goiter may increase often to a dangerous extent. We found, for instance, in a patient with this disease who developed

tensillitis, only 7,000 polynuclear leucocytes and 3,400 lymphocytes, though the symptoms of infection were very marked and a very high temperature was present. The same fact of substitution might explain some of the sudden deaths after operation in severe cases, in analogy to the sudden deaths in lymphatic conditions. When the gravity of a case has been thus established, we can determine the time and decide on the method of operating, for sooner or later we will be able to operate without fear.

Now the second and more important question arises: Can we cure the disease by operation? Most surgeons have noted an immediate increase of the symptoms after operation, which symptoms can even become fatal. I have, in my paper in 1902, claimed that this post-operative aggravation is due mostly to hemorrhage and absorption of toxic blood, especially when gland tissue is resected and injured in any way during the operation. This opinion has since been widely confirmed. By most careful avoidance of any bleeding, by ligation of every small vessel, and by taking the greatest care not to injure the parts of the gland to be left, we can avoid alarming symptoms almost completely. As a matter of fact we see such symptoms at the present day only if, for any reason, the operation had to be done quickly and the gland tissue was injured.

When the immediate effect of the operation is over (and when it has been done under local anesthesia the disturbance lasts but a few hours), the surgeon is surprised at the striking improvement in the patient's condition. The very fact that the symptoms of the disease may disappear so soon after the operation, so that many times the patient is almost normal in a few days, seems to us to be the proof that we have touched the disease in its important place.

I think that it is generally admitted nowadays that the thyroid gland is diseased in every case of exophthalmic goiter, and it is also admitted that it shows functional alteration. It is much to the credit of American physicians that they have demonstrated what are the exact histologic changes in the thyroid gland in this disease. The proliferation of the epithelium, which assumes the cylindrical type, and the liquefaction of colloid are the most striking features and, especially when compared with the hypertrophic glands, described in Halsted's classical experiments, these changes seem to furnish proof of a functional disorder. Still it has been difficult for those who have examined large series of cases and also for those who see a great deal of other diseases of the thyroid gland, to accept the above-mentioned changes as being specific for exophthalmic goiter. We find the same enlargement of follicles with formation of papillae and high cylindrical cells, together with the decrease in thick colloid, in glands of normal size in hypertrophic as well as in nodular goiters, without the slightest symptom of exophthalmic goiter. But we find them in a part of the gland

or in a nodule where vascularization is rather diminished, while the diseased parts in exophthalmic goiter, even if present in areas only, will be found in very vascular parts, as, for instance, in the periphery of the gland or a nodule. We must conclude, therefore, that the histologic changes themselves do not account for the symptoms of the disease, but it is the change of metabolism which shows itself by the increased vascularization of these parts. Chemical experiments, which I can not discuss here, show that material, such as iodine, is taken up eagerly by the thyroid gland in patients with exophthalmic goiter and is not eliminated by the kidneys as it is in normal individuals.

Besides these histologic changes, we must consider, as characteristic for the disease, the formation of lymphoid tissue in the thyroid glands, and in special cases the presence of large cells with specially differentiated protoplasm. The diffuse infiltration with leucocytes and the desquamation of the epithelial cells, which we find very often in the inflamed gland in exophthalmic goiter and which have been described by several authors as being characteristic of the disease are secondary. This may be the result of handling and injuring the gland during operation or the result of treatment with Roentgen rays, electricity, injections, etc. We also find it regularly after ligation of arteries in previous operations.

What are we accomplishing by our operations on the thyroid gland in exophthalmic goiter? Only exceptionally a limited and well circumscribed part of the gland is diseased and can be entirely removed. It happens when the disease develops in a subject with nodular goiter and may also account for the prompt cure of these cases by operation.

Nearly always the changes are diffuse, though in areas, and it is not possible to take away all diseased tissue without depriving the patient of the thyroid function altogether. This is, in my opinion, not permissible. What we can do is to reduce the diseased tissue or its increased vascularization and thereby reduce the assimilation. It has proved that the nearer to the normal we reduce the gland, or its blood supply, the prompter the cure will be. I think it is the best proof against a perverted secretion of the thyroid gland in exophthalmic goiter, that even when we leave behind so-called diseased gland tissue, but under normal blood supply, the improvement after the operation is immediate and goes on to entire cure. We must admit, therefore, that the so-called diseased part of the gland can assimilate normally and, more than that, it can become normal itself or rather adapted to further claims.

The fact that increased vascularization is indispensable for the development of the disease also proves that what reduces vascularization prevents its development. We easily understand, therefore, that in nodular, and especially colloid goiter, with me-

chanically reduced vascularization owing to the great accumulation of colloid, the disease does not easily develop, whereas it does readily in normal and slightly hypertrophic glands. Based on these facts, the operation has been carried out in 254 cases and the results are as follows:

There is not a single case of ours in which the patient has not been much benefited by the thyroid operation. We have cured by our operation the patients in 83 per cent. of all our cases. There are 73 per cent. of the patients with the so-called primary disease healed; 92 per cent. of the patients having the disease combined with ordinary goiter, and 100 per cent. of the patients with vascular goiters. Some of the observations date back 15 and 17 years since the time of observation, without recurrence of the disease, provided that the operation was carried so far that vascular symptoms of the thyroid disappeared completely. In cases of this type the patients are all completely cured, so that no symptom of exophthalmic goiter remains. But the time required for recovery has varied greatly, it being especially long before the heart and eyes became normal again. I wish especially to say that our chances of cure do not so much depend on the degree and the extent of histologic changes as on the duration and the secondary changes in the case.

We have had cases in which the excised gland showed excessive epithelial proliferation in all parts and in which the patient presented all the symptoms in the highest degree, and yet the cure has been just as complete and rapid as in patients showing much colloid matter and less severe symptoms. The difference between the two lies in the fact that the former, as a rule, not only develop very rapidly, but also progress rapidly. Hence an operation must be undertaken early before organic changes take place, and also before the thyroid tissue has undergone induration—that is to say, before the excessive proliferation of cells has mechanically reduced the capillary supply and a part of the functional tissue, and also before infiltration and desquamation have destroyed a part of the functional tissue. These latter changes are the cause of symptoms of hypothyroidism.

Secondary organic changes of this nature were present in 4.8 per cent. of our cases. The patients were all very much benefited by the operation, but some heart trouble, the impossibility of much exertion and more or less exophthalmos remained. These patients might present slight symptoms of hypothyroidism, but I must say that, owing to the great care my father takes in this matter, it has been the exception to see these symptoms appear after operation.

Ten patients (4.4 per cent.) were benefited by thyroid operation, but not as much as could have been expected; some of these had symptoms of other diseases and they seemed to present a

special form of the disease. But space is too limited to discuss this question. Eight patients (3 per cent.) are still under observation, the time since the operation being too short to give any definite opinion concerning them. In another group of eight cases (3 per cent.) the patients could be cured by the thyroid operation, but, being so much improved, do not wish it.

This brings us to the question, how operate? The most important condition is *nihil nocere*, and that is why I have spoken, in the first place, of the danger of operation. We have seen that careful preliminary observation of the case makes a carefully conducted operation a possibility for almost every patient. The method has to be chosen for every case. We give the preference to repeated operations with the patient under close observation and with the help of medical treatment. More than two arteries should never be ligated in one session, because of the above-mentioned changes in the gland. To remove more than half of the gland at one sitting is dangerous, and it is difficult to say whether this is ever wanted. We find it rarely necessary to resect a part of the remaining gland after excision of one side.

The question, When are we to operate? depends not alone on the physician, but also quite as much on the patient. Often the surgeon thinks it the doctor's fault that he is consulted too late, and does not imagine what an unsettled and sick mind the patient has. It is necessary to advise people to see the doctor in the early stages of the disease. Nervousness, irritability, weakness, emaciation, sleeplessness are the early symptoms and are not sufficiently dwelt on. These patients are often regarded as cases of neurasthenia. If such patients were carefully examined by medical men, especially after exertion and before or during menstruation, characteristic, although slight, symptoms could often be made out: such as tachycardia, ocular symptoms, tremor, blood changes, and especially vascular symptoms of the gland.

On these latter symptoms treatment should be decided. Distinct vascular symptoms should at once induce surgical treatment. If they are wanting, the medical treatment, with the patient under close observation, may cure, but if it does not, or if relapses come on, vascular symptoms will develop before long and be at once noticed by the doctor and induce surgical treatment. In such cases ligation of two arteries or excision of half of the gland will cure definitely in a very short time. If the doctor sees the patient only when the disease is at its worst, then we do not advise an immediate operation. Even ligation of one artery may be dangerous then, because of the increase of the discharge of toxic material from the gland and because in these cases the organism has not yet developed its own antitoxic reaction, the lymphocytosis. In these cases medical treatment is needed and cytotoxic

serum here seems to act well. If the reaction of the organism is present, operative treatment must take place.

In cases of longer duration, great benefit can be derived by operation, but here one has to be even more careful, as we have to deal with organic changes in the heart and there is the fear of hypothyroidism. I wish to mention one fact, that in all cases of long duration, whether in the so-called primary cases or in the cases combined with ordinary goiter, always the same symptoms are evident—dilatation of the heart, excitable pulse, and exophthalmos. As to the latter symptom, which is mostly caused by the dilatation of blood vessels in the orbit, the fact that the eyeball does not go back, even when it can be pushed back easily, does not in all cases come from development of fat or connective tissue, as is generally admitted, but also from the fact that the muscles of the eyeball have been distended so much and so long that they can not contract well, if at all. It is possible that electric treatment might be of benefit.

We come now to the conclusion that operation on the thyroid gland gives the possibility of an entire cure of the disease. Whether we admit a primary irritation of the sympathetic nerve, and, therefore, an increased metabolism of the gland, or a primary increase of thyroid material and from it an irritation of the sympathetic system, or both, it amounts to the same thing so far as the thyroid operation is concerned. By reducing the hypertrophic thyroid tissue or reducing its blood supply, we reduce the possibility of too extensive reaction to the primary cause and also enable the gland to adapt itself to counteract new outbreaks of primary causes which a nervous subject can easily show.—*Journal of the American Medical Association*, Oct. 5, 1907.

ABSTRACTS.

Pankreon.—Pankreon, according to a report from the "Lancet Laboratory," is prepared from fresh pancreatic glands, the active principle being subsequently combined with tannic acid, the combination being proof against the action of the gastric juice. It has been administered in cases of carcinoma of the pancreas. After giving pankreon daily for six days the absorption of nutrient material is said to have been increased by 50 per cent. and the output of sugar diminished by nearly a third. Opium, too, diminished the amount of sugar, but the absorption of food material was only increased by 10 per cent.—*The Lancet*, Oct. 20, 1906.

Suggestions of a Plan of Organizing a Hospital System for the City of New York—Stephen Smith gives a number of suggestions concerning the organization of a hospital system. He says that the "Department of Hospitals" should be provided for by an amendment of a charter of the city. The Department should create "Hospital Districts," the division of territory being based on the population of the laboring or tenement house classes and the sickness-rate. Certain public hospitals should become "Emergency Hospitals." Emergency Hospitals should be provided for districts where none now exist. One or more "Convalescent Hospitals" should be created on ample farm lands located on the water front within easy access of the city. The "Special" and "Contagious Diseases" Hospitals would take their proper places in this organization of hospitals.—*Medical Record*, January 5, 1907.

Report of Two Cases of Dementia Paralytica, One Associated with a Large Hemorrhagic Lesion, the Other with Atrophy of the Optic Tract.—Jessie Weston Fisher presents the results of a careful study of these two cases. There are not many records of dementia paralytica associated with gross focal lesions of the brain. Autopsy showed, in the brain of the first patient here described, an area of hemorrhagic degeneration in the corona radialis of the left hemisphere. This lesion began just anterior to the tip of the anterior horn of the left ventricle, extending posteriorly to the dorsal extremity of the caudate nucleus. The anterior limb of the internal capsule was also involved by this lesion. On examination of the brain of the second patient, there was discovered atrophy of both optic nerves and tracts, and the lateral geniculate bodies of each side were found to be about one-half normal size.—*Medical Record*, January 5, 1907.

School Hygiene.

SCHOOL LIFE VIEWED FROM THE STANDPOINT OF PSYCHOLOGICAL MEDICINE.

ONE of the most important papers presented at the Annual Meeting of the British Medical Association at Sheffield was upon the above-mentioned subject and was prepared by a well-known authority, Dr. Francis Warner, of London. The following are the headings of the discussion: Clinical Study in Schools; Mental and Physical Hygiene; the Children to be Educated. Constitutional Differences between Boys and Girls; Subnormal Children; Objective Study of the Child; Nerve-signs and Response. Types of Childhood; Healthy Children; Children with Some Degree of Defect in Physical Development; Neurotic Children; Children Showing Brain Disorderliness and Mental Dullness; Children Mentally Feeble. Training and Teaching: The School and the Staff.

MEDICAL INSPECTION OF SCHOOLS.

A QUESTION was recently asked in the House of Commons as to what course the Government proposed to follow in dealing with school authorities who had neglected or postponed indefinitely the duty of providing for the medical inspection of schools. In reply, Mr. McKenna, President of the Board of Education, said that steps were being taken both by correspondence and by local investigation to ascertain the manner in which arrangements for medical inspection were being initiated, and a clause had been inserted into the code requiring as a condition of the payment of the annual grant in respect of any school that satisfactory provision should be made for the medical inspection of the children attending the school. Failure on the part of the local authority to comply with the requirements of the Act might therefore in addition to, and in substitution of, other statutory remedies result in the refusal of, or deduction from, the grant. Special attention had been called to this matter in the prefatory memorandum to the code, and he thought the publicity attaching

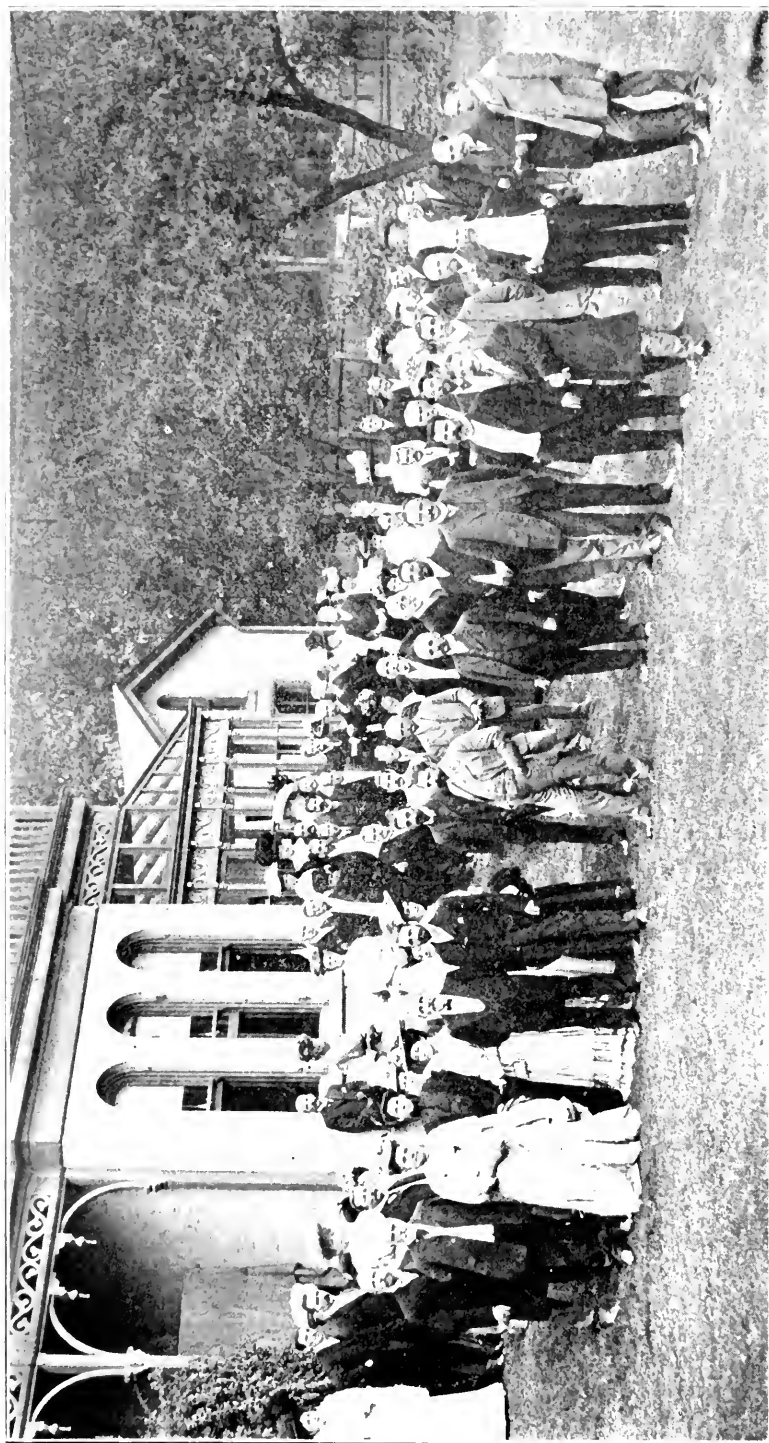
to the code could suffice to apprise the authorities of its requirements. The Board had no control over the salaries payable by local authorities to officers engaged in medical inspection, except in so far as inadequate remuneration might be found to result in the inefficiency of inspection; and until the various schemes were in working order and the Board had had opportunities of comparing the methods and efficiency of medical inspection in the various areas he should not be prepared to say whether any particular salaries could be regarded as insufficient. He had recently stated to a deputation that inquiries as to the methods or machinery of medical inspection should obviously be addressed to the Board in writing, and if made would receive prompt attention and as far as possible full replies. It was impossible to deal satisfactorily or completely with matters of detail within the limits of an answer in the House, and he should be exposing both the Board and local authorities to risk of misunderstanding if he attempted to do so.

TUBERCULOSIS AMONG SCHOOL CHILDREN.

THE subject of school hygiene has not been overlooked in connection with the International Congress on Tuberculosis. A series of papers is being prepared, which will deal with Medical Inspection of Schools, School Nursing, Prophylaxis of Tuberculosis in School, etc. Dr. Elliott, of Toronto and Gravenhurst, has charge of the paper describing what Canada is doing in the matter.

It may well be recalled in this connection that the discussion upon Dr. W. J. Dobbie's paper at the last meeting of the Canadian Hospital Association on Tuberculosis brought out the importance of carrying the anti-tuberculosis campaign right into our schools. Dr. Gordon's contribution to the discussion was an eloquent and convincing address on this subject, and a resolution was forwarded to the Ontario Educational Association, then in session.

The Government of Newfoundland also appreciates the importance of fighting tuberculosis in the schools. They have given a grant sufficient to defray the expenses of all the teachers in the colony, some two hundred and fifty in number, in connection with a Teachers' Anti-Tuberculosis meeting in St. John's, Nfld. This is part of the aggressive warfare now being waged by the Newfoundland Society for the Prevention of Tuberculosis. This work is badly needed, as the mortality from tuberculosis is said to have increased 50 per cent. in the last six years in Newfoundland.



Garden Party given by the Academy of Medicine Toronto, on Friday, September 18th, 1908, in honor of the French Physicians.

The Canadian Journal of Medicine and Surgery

J. J. CASSIDY, M.D.,

EDITOR,

43 BLOOR STREET EAST, TORONTO.

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Clinical Surgery—ALEX. PRIMROSE, M.B., C.M. Edinburgh University; Professor of Anatomy and Director of the Anatomical Department, Toronto University; Associate Professor of Clinical Surgery, Toronto University; Secretary Medical Faculty, Toronto University.

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Doctors will confer a favor by sending news, reports and papers of interest from any section of the country. Individual experience and theories are also accepted. Contributors must kindly remember that all papers, reports, correspondence, etc., must be in our hands by the first of the month previous to publication.

Advertisements, to insure insertion in the issue of any month, should be sent not later than the fifth of the preceding month. London, Eng. Representatives, W. Hamilton Main, Thayer House, 231 Strand, W.C. Agents for Germany, Starbach's News Exchange, Münz, Germany.

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Editorials.

L'ENTENTE CORDIALE MEDICALE.

As one entered into the spirit of cordiality extended to the French Gentlemen, distinguished in the world of medical science, recently visiting Toronto for a day and hours *en route* to Washington, D.C., to attend the great Congress on Tuberculosis, one again regretted the little mix-up that occurred at the Tower of Babel, and wished a long, long wish for a universal language (with respect to Esper-

auto), universally spoken. Fortunately, a number of our doctors are fluent linguists, and they fittingly expressed the sentiments of all, namely an admiration for the French physicians and their achievements, and for their beautiful and beloved France. Was it not a Frenchman who voiced the sentiment we all know so well:

"It is when we are far from our country that we feel, above all, the instinct which attaches us to it."

After an auto ride around the city, Dr. R. A. Reeve (Dean of the Medical Faculty of Toronto University) was first, as ever, to invite the visitors to take luncheon with him, and also extend his hospitality as far as possible to local members of the profession, thereby conferring a great privilege, as well as pleasure, only possible by an informal meeting. The few toasts were fittingly phrased, and the Dean's guests expressed themselves as charmed with the fine University buildings. In the afternoon the "Academy of Medicine," in its present delightful quarters, opened wide its doors and windows to the "pic, pic" of the birds of passage, of both plumage sombre and plumage gay, and over the teacups an hour soon sped away, adding its laughter to pleasant memories.

From another page, by permission, the faces of the distinguished guests of the Academy of Medicine greet our readers.

The medical men of Canada owe, indeed, a debt of gratitude to Dr. J. F. W. Ross and his associates for their herculean efforts in planning and carrying out their idea of an Academy of Medicine in Toronto; its possibilities and scope are only beginning to be fully realized.

In the evening a brilliant dinner party was the farewell tendered the French doctors by Dr. J. F. W. Ross and Dr. W. H. B. Aikins. It is not a passing compliment, but the whole truth, to say that Toronto men feel deeply grateful to those who, through personal kindness and hospitality, made not only for themselves but in a large measure for our Canadian city a delightful and lasting impression upon the strangers within our gates. Medical gentlemen of the *savoir faire*, do not be too proud to disdain your success.

W. A. Y.

EXOPHTHALMIC GOITER.

IN this issue of our journal we publish several papers on exophthalmic goiter. These papers first appeared in the *Journal of the American Medical Association*, and we are indebted to that journal for the pleasure of being able to place them before our readers. The physiology of the thyroid gland in its relation to exophthalmic goiter is discussed by S. P. Beebe, M.D., New York City; the pathology of exophthalmic goiter by W. G. MacCallum, M.D., Associate Professor of Pathology, Johns Hopkins University, Baltimore; the diagnosis by Lewellyn F. Barker, M.D., Baltimore; the medical treatment by Robert B. Preble, M.D., Chicago; the surgical treatment by Albert Kocher, M.D., Berne, Switzerland. These papers are all of a high type and show what is actually known of this somewhat recondite subject. The etiology of the disease is obscure. In some cases goiters which appear to be of the simple kind, under excitement or other unknown cause, begin to pulsate and are attended with some protrusion of the eyeballs, these symptoms disappearing by rest and time, the case subsequently reassuming the clinical features of a simple goiter. Such cases as these stand as a kind of link between the simple goiter and that known as the exophthalmic goiter, Graves' or Basedow's disease, and yet between the two affections there must be some wide difference, for the simple goiter appears to be a local affection, whereas the exophthalmic form is probably part of a more general disease, marked by the enlargement of the thyroid body, often prominence of the eyeballs, always palpitation of the heart, a peculiar thrill in the blood-vessels, and a general want of muscular and brain power.

Dr. Beebe says that we know little of what the thyroid secretion does when confined to physiologic limits; but we do know that animals overdosed with thyroid preparations exhibit symptoms characteristic of exophthalmic goiter, viz., exophthalmus, tachycardia, tremor, gastro-intestinal disturbance, profuse sweating, increase in temperature, rapid loss in body weight, severe mental disturbance. Granting that the hyper-secretion theory explains the origin of the signs and symptoms of exophthalmic goiter, no adequate explanation of the hyperactivity of the thyroid can be given. Two commonly accepted possibilities are offered: (1) This disease

is the result of a nervous shock; or (2) it is a compensatory hypertrophy occurring during a toxemia.

Naturally, a patient who has this disease requires rest of mind and body and a carefully regulated dietary. Baths, massage, electro-therapy have all been used with advantage, probably in proportion to the belief the patient entertains of their efficacy. Drugs have been employed in its treatment with more or less success, namely, iron, if there is anemia, arsenic, digitalis, the bromides of sodium and potassium, opium, quinine, antipyrin, salicylates, aconite, sodium phosphate, and strychnia. Dr. Preble thinks that bodies prepared from various glands, having an internal secretion, such as the thyroid, the thymus, the suprarenals, the ovaries and testicles, are useless, with the exception of the thyroid preparations, which are positively harmful, unless in cases in which exophthalmic goiter is associated with myxedema.

That a number of autitoxic or cytotoxic preparations have been used in the treatment of this disease would seem to best fit in with the current idea, that an excessive or perverted activity on the part of the thyroid gland is the essential factor of this disease. These preparations are of two sorts: (1) Those derived from animals which have suffered thyroidectomy; (2) those derived from animals to which normal or pathologic thyroid glands have been administered. The milk, either natural or desiccated, from thyroidectomised animals has been extensively used. Moebius' thyroidin (a preparation of the blood of a sheep from which the thyroid gland has been removed some time previously) has given good results. The dose is from 2 to 12 drops daily, given for a period of twenty days. Recently a serum has been used, which is prepared by Rogers and Beebe by the use of nucleoproteid and thyroglobulin from normal and pathologic glands.

Dr. Preble attaches little importance to any form of medicinal therapy in exophthalmic goiter, and expresses the opinion that the cures and improvements apparently resulting from any kind of medical treatment are to be referred to rest, to hygiene, and the healing effects of time, rather than to the material administered.

This leaves a large part of the therapeutic field open to the surgeon. Dr. Kocher, who writes on the surgical side of exophthalmic goiter, believes that increased vascularisation in a part of the thyroid, or in several areas of that gland, is the essential patho-

logical feature, which calls for surgical treatment in this disease. His admirable paper is worthy of the closest perusal. We shall close this editorial notice of these papers with a citation from Dr. Kocher's paper, which at once exhibits the current theories of the etiology of exophthalmic goiter and a sufficient reason for treating this disease by a surgical operation. Dr. Kocher says: "Whether we admit a primary irritation of the sympathetic nerve, and, therefore, an increased irritation of the gland, or a primary increase of thyroid material and from it an irritation of the sympathetic system, or both, it amounts to the same thing, so far as the thyroid operation is concerned. By reducing the hypertrophic thyroid tissue, or reducing its blood supply, we reduce the possibility of too extensive a reaction to the primary cause, and also enable the gland to counteract new outbreaks of primary causes, which a nervous subject can easily show."

J. J. C.

MUZZLE THE DOGS.

It would seem as if the authorities of Toronto did not understand the grave aspect of the situation of having dogs running about our streets unmuzzled. One of their duties toward the public is to place some kind of a safeguard between them and danger. In the streets of our celebrated "Ward," curs of all degrees of lineage disport themselves, small children are as thick as flies, and as friendly as can be with the dogs, often sharing "bite about." Of course, the "dog wagon" calls sometimes, but certainly not often enough.

In the East End, where the child population is large, also, the number of dogs is alarming. In one street near Parliament, we counted twenty-two dogs, one brute nearly as large as a Shetland pony, and none of them wore a muzzle. If the threatened epidemic of Rabies, which has given us a forewarning recently in Toronto, should break out, more children would be bitten in a short time than many Pasteur Institutes could give treatment to, and the parents possibly could not afford even to send them for treatment.

Why not make a law that all licensed dogs *must be muzzled*, and not allowed to roam unaccompanied by their owners, and vigorously enforce the law that all tramp dogs be charged with vagrancy and sent painlessly to a happier hunting ground?

W. A. Y.

EDITORIAL NOTES.

Dietetic Treatment of Gastric Ulcers.—W. Sternberg (*Behandlung des Ulcus Ventriculi Mittels Rationeller Küche*) believes that mechanical conditions, rather than chemical ones, are of the greatest importance in the treatment of gastric ulcer. Food may be so prepared that it is extremely easy to digest, not in the sense of chemical predigestion, but in the physical direction. This physico-mechanical preparation of food is most important for the stomach and upper part of the intestine. He gives illustrations of 13 improved kitchen utensils, which allow the food to be ground and strained, while yet retaining a consistency which permits of mastication. He would banish the spoon for stirring and use only the pestle. For hospitals he recommends a marble mortar, worked by power, or by hand, for grinding the food, raw or cooked, passing it then through a hair sieve, working it through the sieve with a broad masher, not a spoon. Still more effective is the passing of the food through a cloth. Two men hold the ends of a large cloth, and force the substance through it with two heavy wooden ladles, with great force. The substance then is smooth as velvet and melts in the mouth. This renders the food exceptionally digestible in the stomach. In this way the famous French dishes, "Crème de Gibier" and "Crème de Volaille," are made.

Overfeeding and Improper Feeding are Causes of Infantile Diarrhea.—Reports for July, 1908, turned in by seventy-five physicians who attended the poor in the congested areas of Chicago under the direction of the Department of Health of that city, show that by far the greater part of sickness among babies has been due to lack of proper care. Improper food, *overfeeding*, overdressing, lack of personal cleanliness, and want of fresh air are factors that produce most of the illnesses that kill the babies in hot weather. The most frequently reported abuse is *overfeeding*. The temptation to feed the baby every time it cries is too often yielded to. The feeding of improper food is another very common and frequently disastrous practice. Hundreds of little babies have been found eating rich, heavy foods—such as pastries, cakes, sausages, etc. Not a few have been observed feeding on soured milk. Among the overfed and the improperly fed diarrheal diseases are most preva-

lent. When these diseases develop, home treatment is resorted to and, in the majority of cases, proper medical attention is called for too late. Overdressing, lack of bathing, and want of fresh air are also mentioned in the physicians' reports as contributing factors to infantile mortality in hot weather. An interesting observation is made relative to the rates of mortality noted among the babies in the poorer sections of Chicago and babies on the boulevards of that city: "It has been observed that fully 75 per cent. of the babies in the poorer section of the city are breast-fed—a much larger proportion than among the boulevard babies. And yet, under existing conditions, the baby of the poorer sections of the city has less chance of surviving his first year than the baby of the better residence districts. Correct the existing conditions, however, and give the baby of the poorer sections the intelligent care it should have and we will soon see a death rate among them lower than among the boulevard babies. Other things being equal, the breast-fed baby has a much better chance of living than the artificially-fed one." The observations of the Chicago physicians go to prove that unsanitary premises and the general milk supply have less to do with the high infantile mortality in that city than is commonly supposed. The personal habits of the people are believed to be productive of the trouble. The mothers require to be taught how to care properly for their children. The physicians of the Chicago Health Department are carrying on a campaign of instruction by teaching the poorer people of the city how they should raise the young, and especially how they should avoid hot-weather diseases.

Urotropin (Hexamethylene-tetramine).—This drug, formed by the action of formaldehyde on ammonia, was introduced in 1894 by Nicolaier, as a urinary antiseptic, and still holds the first place among drugs used for that purpose. Regarding the prevention of bacteriuria, J. W. Churchman (Johns Hopkins Hospital Reports, Vol. 13, pp. 139-207), says: "In no cystoscopy done in the practice of Dr. Young on patients whose urine was uninfected and who had received urotropin internally did the subsequent examination of the urine by centrifugalization reveal organisms. But, in one case, in which the patient had not received this preventive medication, an infection did develop. Incipient bacteriuria without cystitis can, in the majority of cases, be inhibited by internal medication. In exceptional cases the bacteriuria will persist, despite

treatment. In the majority of bacteriurias associated with cystitis, it is practically impossible to wholly remove the organisms which have produced cystitis. Pus may diminish in amount, symptoms be relieved, and the urine cleared, but only occasionally will the infections disappear completely. From a series of bacteriological experiments with the urines of patients who took urotropin, methylene blue or salol by mouth, Churchman concludes: (1) Administration of urotropin, methylene blue or salol renders the urine inhibitive of the growth of the staphylococcus pyogenes, streptococcus pyogenes, B. typhosis, B. coli communis, and B. proteus vulgaris. (2) Urotropin and methylene blue are more inhibitive than salol; the choice lies with the first. (3) These drugs effect inhibition of bacterial development, rather than destruction of bacterial life. They render urine an uncongenial medium for growth, but not an environment necessitating death. (4) Their effect is weakest on the staphylococcus pyogenes and strongest on B. typhosus and streptococcus pyogenes. S. J. Crow (*Johns Hopkins Hospital Bulletin*, April, 1908) says: "In four cases, in which gall bladder operations were done at the Johns Hopkins Hospital, urotropin was given immediately afterwards in large doses (60-75 grains daily). The material aspirated from the sinus, before the administration of the drug, contained large amounts of various bacteria; that aspirated from the sinus subsequent to its administration was entirely free from bacteria, and chemical tests showed the presence of large quantities of urotropin, or its decomposition product, formaldehyde. In the case of the typhoid bacillus, the rapid disappearance of the organisms was especially evident. In a case of gonorrheal arthritis, treated with large doses of urotropin (80 grains a day), aspiration showed that the gonococcus had completely disappeared from the aspirated pus. The clinical condition of the joint improved markedly. Crow finds, that the presence of urotropin has been demonstrated in bile, cerebrospinal fluid, synovial fluid, pleural effusion and the blood of man. When given in sufficiently large doses (75 grains per diem), it appears in the bile in quantities which suffice to exercise a decided bactericidal action.

Some of the Uses of Chloretone.—Chloretone, made by adding caustic potash to chloroform and acetone, is a white camphoraceous compound. It is an anaesthetic, general and local and hyp-

notie—dose gr. ii — x. It resembles chloral in its hypnotic action; in its combined analgesic and antiseptic action it resembles a combination of cocaine and menthol. It produces regular and deep sleep in doses of from $4\frac{1}{2}$ to 9 grains, and may be given in powders, capsules or in an alcoholic menstruum. It is only sparingly soluble in cold water, but dissolves readily in hot water, alcohol, ether and chloroform. It produces a longer sleep than chloral, chloralamide, or the well-known combination of chloral and bromide of potassium. Its local analgesic action on the mucous membrane of the stomach causes it to be indicated in seasickness and in the stomach aches of nervous patients. It is also useful in premenstrual pains and the vomiting of pregnancy in doses of $2\frac{1}{4}$ to 3 grains for two or three doses, at half-hour intervals. In dental caries a portion of a mixture made after the following formula may be applied with advantage to the aching tooth on a bit of absorbent cotton:

R	Chloretone,	
	Camphor.....aa	5ss
	Tr. cinnamomi.....	℥viii
	Ol. cajuput	gr. lxxvii

In acute diseases of the nose and throat and of the larynx, sprays of the following mixture exercise sedative, vaso-constrictive and decongestive effects:

R	Chloretone	gr. 15
	Camphor	gr. 33
	Menthol.....	gr. 33
	Tr. cinnamomi.....	℥viii
	Liq. vaseline.....	5ij

Warbrick has successfully used the above formula, combined with adrenalin, in sprays and inhalations, for the treatment of acute and chronic rhinitis. In tonsillitis and in hay-fever, when the painful areas can be reached, he applies the mixture to the affected parts, by means of an applicator tipped with cotton; in cases of laryngitis he uses sprays of the same mixture. Lubet-Barbon and Fiero employ it as an analgesic to overcome the obstinate dysphagia of patients who have large tubercular infiltrations of the larynx or to relieve the pains, which follow the application of the galvano cauter. The analgesia lasts two or three hours. They also comment favorably on its not inconsiderable antiseptic and microbicide power.

J. J. C.

PERSONALS.

DR. IRVING CAMERON returned from Great Britain on the 20th of September.

DR. A. J. JOHNSON was elected Director of the Confederation Life Association last month.

DR. SKINNER GORDON announces her removal to 467 Spadina Avenue, south-east corner of the Knox College Crescent.

DR. R. D. RUDOLF has been appointed Professor of Therapeutics in the Medical Faculty of the University of Toronto.

DR. NORMAN K. WILSON, one of the recent Council graduates, is practising with his father, Dr. W. J. Wilson, at 159 College St.

DR. F. C. TREBILCOCK, 722 Spadina Avenue, announces to the profession that in future he will confine his attention entirely to ophthalmic practice.

DR. CRAWFORD SCADDING returned from a delightful honeymoon trip to England about a month ago. Needless to say, he looks to be in the pink of condition.

DR. E. A. McCULLOCH, partner of Dr. N. A. Powell, is progressing. His condition, however, is not altogether what his friends would like. We wish him speedy restoration to health.

DR. CHARLES M. STEWART, 142 Carlton Street, late Senior Resident Surgeon the Throat Hospital, Golden Square, London, desires to announce that he will confine his practice entirely to diseases of the ear, nose and throat.

DR. HARRY MORELL, of Regina, on July 22nd, while driving to the Indian School, after the Government House reception given to the Saskatchewan Medical Association, in company with Dr. and Mrs. Bingham, Toronto, took quite ill, necessitating operative interference on the part of Dr. Bingham. The outcome of the case was all right, as Morell writes us "My friend Bingham did a good job, and I want you and my friends to know this."

DR. HAMILL, Medical Broker, Janes Building, Toronto, who conducts the Canadian Medical Exchange, for the purchase and sale of medical practices and properties, desires us to say to physicians

thinking of disposing of their practices or properties that this is an unusually desirable time for them to list their offers with him, as he has the best list of buyers registered with him that he has had for many months and is in a position to quickly and quietly sell any inviting medical practice anywhere in Canada.

WE are glad to be able to report that Dr. Bruce L. Riordan, who went down for treatment to the Pasteur Institute, New York, two weeks ago, is getting along nicely. Dr. Riordan was bitten by a family pet dog, and on the cadaver being examined the animal was found to have contracted rabies in a most acute form. The doctor considered that an ounce of prevention was worth a pound of cure, and placed himself promptly under treatment, with the result that he has almost entirely recovered.

WE had the pleasure of having a call recently from Dr. A. R. Avison, of Seoul Korea. A great many Toronto physicians will remember Dr. Avison, who practised on Carlton Street for many years, but who gave himself up to medical missionary work in Korea in 1895. The doctor is now Medical Superintendent of Severance Hospital at Seoul, Korea, and is doing magnificent work there, not only saving souls, but attending to the bodily ills and infirmities of that Eastern race. Dr. Avison is spending the early autumn in Canada, and returns to his home in the East before Christmas.

Correspondence.

The Editor cannot hold himself responsible for any views expressed in this Department.

A VALUABLE DISCOVERY—A NEW HYPNOTIC.

EDITOR OF CANADIAN JOURNAL OF MEDICINE AND SURGERY:

Sir,—Please allow me to call attention to the discovery that apomorphine hydrochloride, when administered hypodermically in doses just short of the emetic dose, is an ideal hypnotic. In doses of the 1-30th of a grain, it may be used with safety in all cases in which a hypnotic or antispasmodic is indicated, but is of special value in the treatment of acute alcoholism and delirium tremens. This valuable discovery was made by Dr. C. J. Douglas, of Boston, in 1899, but, strangely enough, the discovery remains almost unknown, and the boon, of course, not taken advantage of, as it doubtless will be when this important property of apomorphine becomes fully realized. We know how promptly this drug acts when administered as an emetic in emetic doses of the 1-10th or the 1-8th of a grain. With almost equal promptness is its action when administered as an hypnotic. The alcoholic, however wild or noisy, will, as a rule, be peacefully sleeping in ten or twelve minutes after the 1-20th or the 1-30th of a grain is administered subcutaneously. This sleep may last several hours, when the patient awakens refreshed and sober. Douglas employed the remedy, with these doses, in over 200 cases, mostly alcoholics, including cases of delirium tremens, and with gratifying results. Drs. Coleman and Polk, of Bellevue Hospital, New York, used it in over 300 cases of alcoholism, also with gratifying results. Dr. Rosenwaser, inebriatist to Newark Dispensary, Newark, N.J., has also used apomorphine in the same manner, and for the same purpose, and with equally satisfactory results. The dose administered was from 1-30th to 1-20th of a grain. With these doses, the hypnotic effect is secured in 67 per cent. of the cases. Even the 1-40th of a grain, in my experience, is effective with some patients.

There are vagaries in the conduct of apomorphine that should be noted, viz., it is inert when administered in a solution of boracic acid; it is almost inert as a hypnotic or centric emetic when administered by the mouth. It should also be noted that the crystalline form only should be used, and also that, in cases in which the pulse is feeble, strychnine should be given in association with the apomorphine.

This important discovery will surely mark the commencement of a new era in the management of cases of acute alcoholism and delirium tremens. In many hospitals, at present, these troublesome cases are far from being welcome guests; but when it becomes generally known that we have at command an hypnotic, safe and prompt in its action, and peculiarly adapted to the management of these perplexing cases, this reluctance to their reception should be entirely removed. It is doubtless pretty generally known to the members of the medical profession of this Province that a bill was prepared several years ago for the Ontario Government for the economic treatment of indigent inebriates. This bill was drafted by a joint committee, representing the Ontario Medical Association and the Prisoners' Aid Association, respectively. From various causes this bill has never been presented to the Ontario Legislature, but a special effort will be made to have it introduced at the next session. In this bill, as will be remembered, it is proposed, with a view to economy, to utilize the wards of the general hospitals of the Province for the reception and treatment of indigent inebriates of the more hopeful class. This discovery of the hypnotic property of apomorphine, and the facility with which it brings alcoholic patients under control, will, doubtless, help very materially in clearing the way for the introduction of the bill; and when the bill is adopted, and its provisions faithfully carried out, it should go a long way in cutting off the supply of recruits for the jails of the Province, as well as for the combined reformatory and farm colony about to be established by the Ontario Government.

In this connection, I would add that, in the proposed bill, provision is also made for combining the Massachusetts probation system of prolonged supervision, with medical treatment, and this medical treatment may be carried out, according to the nature of the case, either in a hospital or in the form of dispensary or home treatment. This system of combining the probation system with medical treatment has been in operation in Toronto by the Ontario Society for the Reformation of Inebriates for over two years, on a small scale, with encouraging results. Yours, truly,

A. M. ROSEBRUGH.

Secretary Ontario Society for the Reformation of Inebriates.
Toronto, August 22, 1908.

Obituary

DEATH OF DR. HODGE, OF LONDON.

Dr. Geo. Hodge, of London, Ont., Professor of Clinical Medicine in the Western Medical School; and one of the best-known physicians in Ontario, died at St. Joseph's Hospital, in London, on August 26th, from pneumonia. Dr. Hodge was 68 years old, and graduated from Queen's University in 1870.

DR. WILLIAM NATTRESS SUCCUMBS TO PLEURISY.

THE illness of Lieut.-Col. Dr. William Nattress had a fatal termination on September 14th, shortly before 5 o'clock, at the residence, 42 Carlton Street. The deceased was a native of Woodbridge, Ont., and was in his 56th year. He was in rather poor health when as Chief Medical Officer of the Western Ontario Command of the Permanent Army Medical Corps he left for the tercentenary celebration at Quebec. During the wet spell there Dr. Nattress was seized with pleurisy and had to undergo an operation for empyaema. He rallied sufficiently to be brought home, but continued seriously ill. The deceased was married in 1890 to Miss Denison, daughter of Col. G. T. Denison. The bereaved widow is the recipient of sympathy from a wide circle of friends. Dr. Nattress was a member of Holy Trinity Church, of which his brother, Rev. George Nattress, of Boston, Mass., was at one time one of the clergy. Dr. Nattress was widely known in military and medical circles, and attained recognition in the literary sphere by his authorship of the school text-book, "Temperance and Hygiene." The funeral took place on Wednesday, September 16th, at 1.30 p.m., from the family residence to Weston, where the interment was made in St. John's Cemetery. The service at the house was conducted by Rev. Dr. Pearson, of Holy Trinity Church, and at the grave by Rev. T. C. Street Macklem, of Trinity College. Lieut.-Col. Septimus Denison, C.M.G., S.O.; Col. F. L. Lessard, C.B., A.G.; John Galloway, D.A.A.G., and Major J. T. Clarke, A.M.C., were pall-bearers. The chief mourners included his brothers, Isaac Nattress, Leonard Nattress, Rev. George Nattress, Joseph Nattress and Thomas Nattress; his nephews, Rev. Thomas Nattress, Dr. John Lawson, Dr. Joseph

Lawson; Col. G. T. Denison, father-in-law; Major G. T. Denison, brother-in-law; A. M. M. Kirkpatrick, brother-in-law, and Douglas Kirkpatrick, nephew. There was a large attendance of citizens, which included military men and members of the medical profession.

DEATH OF DR. GEORGE HUNT, OF NEW LOWELL.

SELDOM has death removed a member of the community and left such widespread sorrow as is felt by the passing away at New Lowell, Ont., of Dr. George Hunt on September 5th. Although only forty-three years of age, he had endeared himself to hundreds of families, and among the poor especially, where he ministered cheerfully and often without hope of reward. On all sides expressions of sympathy are heard for those he leaves behind, a wife and son, a mother and a sister.

The late Dr. Hunt was born at Thornton on November 29, 1865. He graduated from Victoria University and Toronto Medical School in 1886, and after practising for two years with Dr. R. L. Island at Rosemount removed to New Lowell, where he has lived ever since. He was the first Medical Health Officer of the Township of Sunnidale, and held the position to the end. In 1899-1900 he was elected to the County Council, where he was the chief mover in organizing a House of Refuge for Simcoe County. As a politician Dr. Hunt was becoming widely known, and did effective service. He had been chosen as President of the Conservative Association for Centre Simcoe, and held that office at the time of his death.

News of the Month.

FURTHER APPOINTMENTS TO THE MEDICAL FACULTY OF THE UNIVERSITY OF TORONTO.

THE Board of Governors of Varsity have made two additions to the medical faculty.

Dr. Graham Chambers, B.A., M.D., becomes Associate Professor in Clinical Medicine, and Dr. Walter McKeown, B.A., M.R.C.S. (Eng.), Associate Professor in Clinical Surgery. Both are Arts graduates of Toronto University, as well as men who received their first medical training in the city of Toronto.

Dr. Chambers is one of the chiefs of the medical staff of the Toronto General Hospital, and Dr. McKeown is one of the surgeons of St. Michael's Hospital staff.

TORONTO'S NEW MORGUE.

As soon as \$1,500 worth of furniture is installed, the new city morgue in Lombard Street will be ready for use. It is just as handsome and complete as \$40,000 can make it.

A long apartment on the ground floor, to the west, is finished in oak, with a high wainseoting. It is divided in the middle by the receptacles for bodies. There are two tiers of seven receptacles each, and the bodies are placed on carriers, which pull outward on rollers. The tiers are iced from above, and the entire outfit resembles a huge refrigerator. The icing is done through an opening on the west side of the building, eliminating the necessity of entering the building to place the ice in the receptacle. The morgue accommodates fourteen bodies, and is a replica of the morgue attached to the Bellevue Hospital in New York City.

On the right of the entrance is the office, where a girl is in attendance from 8 a.m. until 5 in the afternoon. After that hour the caretaker takes over the management of the place until 2 a.m.

On the second storey, to the front, and running the entire width of the building, is the apartment set aside for the hearing of inquests. A retiring room has been placed at the disposal of the coroners. It includes a very complete lavatory. In the rear is a room for lawyers. To the west are apartments for male and female witnesses, each equipped with lavatories. In fact, every official or person whose business takes them to an inquest has been

well looked after. There is one apartment there to which as yet no use has been assigned, and it was doubtfully dubbed the Press Room. The city fathers will be put to it to even name the many apartments which they have incorporated in the new morgue.

Stables and carriage houses have been provided for the ambulances which handle cases of infectious diseases. The stable accommodates three horses and the house two ambulances. Above are sleeping apartments for the man on duty.

A citizen who was of a cynical and doubting turn of mind suggested that far less expensive quarters could have been secured which would have answered the purposes of the new morgue just as well. One of the old but solidly built residences in the downtown section could have been secured and alterations made at an expenditure, say, of \$2,000. There are many such buildings in Richmond, Church, or Jarvis streets, and one could have been turned into a morgue without offending the neighborhood or eliminating one of the facilities now possessed by the new one. Three bodies at one time constituted a record for the old morgue, and four made a great exception. Whether the fourteen shelves will ever be called into use or not is a matter which depends upon the city's growth, but from past records they will suffer dire neglect.

The entire building is handsome, commodious, and possesses every facility for which it was erected.

DRS. J. N. E. BROWN AND BRUCE SMITH RETURN AFTER VISITING BRITISH HOSPITALS.

DR. J. N. E. BROWN and Dr. R. W. Bruce Smith returned on August 26th from their six weeks' visit to England and Scotland, where they were, on behalf of the Ontario Government, looking into the construction and administration of hospitals and asylums. Dr. Smith gave his attention especially to sanitarium, jail farms and poorhouses. Dr. Brown looked more particularly into the administration of hospitals. They visited London, Edinburgh, Glasgow, Paisley, Belfast, Birmingham, and other cities, and also looked at out-of-town institutions. Everywhere they were cordially received, and they gathered much useful information. Their formal report is in preparation. Dr. Brown mentioned that he had observed quite a number of features in the systems of building and equipping hospitals that were quite different from anything he had seen in the United States, and some things entirely new in Great Britain. He learned some valuable facts about the unit system of buildings, and a new system of ventilation, about which he expects to make some recommendations looking to the new General Hospital buildings in this city.

STAFF REORGANIZATION AT ST. MICHAEL'S HOSPITAL.

A COMPLETE reorganization of the medical staff of St. Michael's Hospital has been announced. There are a number of reasons for the changes, chief among which may be mentioned the fact that when the General Hospital was reorganized, a rule was passed allowing no medical man on the special or department staffs of that institution who was connected with those of another hospital. This rule, however, does not apply to consulting staffs. Another reason is that St. Michael's has a great amount of clinical work, of which Toronto University wished to have the benefit. A system which will work in with these conditions has been adopted. There will now be two services in surgery, of which the chiefs are Dr. I. H. Cameron and Dr. Walter McKeown, and two services in medicine, with Dr. R. J. Dwyer and Dr. H. B. Anderson presiding. The heads of the department of obstetrics and gynecology are Dr. F. Fenton, Dr. A. H. Garrett and Dr. M. Crawford, while Dr. G. H. Burnham is chief of the department having to do with diseases of the eye. A list of the complete staff will shortly be announced. Doctors who are debarred, by the new rule referred to, from acting on departmental staffs, are still retained upon the consulting staff.

Plans are partly ready for a large addition to St. Michael's Hospital, to be built on the property directly to the north of the present building.

THE INTERNATIONAL MEDICAL CONGRESS AT BUDAPEST.

THE sixteenth International Medical Congress will be held at Budapest, Hungary, under the distinguished patronage of the aged Emperor of Austria, from the 29th of August to the 4th of September, inclusive, 1909.

A strong Canadian Committee has been formed to represent the medical profession of Canada at this conference. The following is the Committee: Drs. H. S. Birkett and F. Shepherd, of Montreal; Dr. J. D. Courtenay, of Ottawa; Dr. J. Third, of Kingston; Dr. Ingersoll Olmsted, of Hamilton; Dr. J. D. Wilson, London; Dr. Halpenny, of Winnipeg; Dr. S. T. Tunstall, of Vancouver, and Dr. O. M. Jones, of Victoria; and Drs. W. H. B. Aikins, A. H. Garratt, E. E. King, J. S. MacCallum, G. R. McDonagh, A. McPhedran, G. S. Ryerson and A. H. Wright, Toronto.

The Secretary of the Committee is Dr. W. H. B. Aikins, 50 College Street, Toronto.

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Original Contributions.

THE TREATMENT OF HIP DISEASE

BY B. E. M'KENZIE, B.A., M.D.

THE term "hip disease" has assumed a very definite meaning—something more specific than simply disease at the hip joint. Disease at the hip joint may mean that the pathological factor is gonorrhoea, syphilis, rheumatoid arthritis, malignant disease, rheumatism, or tuberculosis. The term "hip disease" is employed to signify the last, and is now almost universally taken to imply a focus of tubercular disease in some of the structures which together constitute the hip joint.

Mr. Bowlby, of London, has recently published an article which presents certainly very striking results. During twenty-one years just passed, nine hundred cases of tuberculous disease of the hip have been treated at the Alexandra Hospital, with a mortality of less than 4 per cent. In the year 1879, the Clinical Society of London instituted an enquiry to ascertain the relative merits of treatment by rest and other associated measures, on the one hand, and by operation, notably by excision, on the other. The report of the committee may be found in the fourteenth volume of the "Transactions of the Clinical Society" (1881). Of three hundred and eighty-four cases treated in the Alexandra Hospital, referred to in the above enquiry (1881), one hundred died, a mortality of 26 per cent. The causes of death assigned are as follows: Tuberculous meningitis, 23; extension of local disease and visceral complications, such as amyloid disease, tuberculous disease of the lung, etc., 66; intercurrent diseases, that is to say, other diseases which were not directly connected with the hip disease, 11; making

a total of 100. In cases treated by excision, the mortality was 40 per cent.

In this country, up till about the year 1890, excision of the hip was very commonly resorted to as a method of treatment. It had received an impetus through the work of Mr. Croft, of St. Thomas Hospital, and it was thought that the entire tuberculous tissues could be removed, and that early and healthy healing could be promptly secured. It is not necessary at this late date to deal very fully with that question. It may be safely stated that typical excision of the hip is now seldom or never performed in this country for hip disease.

The treatment universally adopted may be said to be conservative. The definite understanding of the term "hip disease" narrows greatly the limits of discussion. The principles of treatment established in the care of tuberculous disease elsewhere will apply, modified, it may be, by the consideration of the special tissues affected.

The treatment may be considered as constitutional and local. Drugs, doubtless, have an important place, though much less important than that which has in the past been assigned to them. Iron, cod liver oil, and other tissue builders hold an important place, but it is not necessary to speak of them here at length.

Diet is one of the most important factors to receive consideration. The advocacy of over-feeding, or "forced feeding," seems to have reached the height of folly in many instances. Not the food ingested, but the food digested indicates the amount of nourishment supplied. When forced feeding is adopted there is a great liability to impose a heavy burden upon the emunctory organs in getting rid of the useless surplus, which the digestive organs are not able to handle successfully. In one instance, a patient who had a tubercular knee and a tubercular focus in the lungs consulted the writer, and stated that he had for some time been taking twelve eggs per day, with the result that he was having marked symptoms of indigestion. Very few persons can succeed in making use of such an amount of food, whose habits of life are not exceedingly active. The diet should be nourishing, should be given at regular intervals, should be chosen in accordance with the likes or dislikes of the patient, should be the result of careful observation as to what foods are suited best in the particular case, and should be given within the limit of over-feeding. Perhaps one general statement can be successfully established in this connection, namely, that the use of fats up to the utmost limit possible of successful digestion is indicated. One of the chief advantages of the outdoor life is that the processes of digestion are greatly improved, and more food can therefore be assimilated.

Other hygienic measures that are well understood, such as proper bathing, regular and abundant sleep, etc., should be kept in mind.

Probably the greatest advance made in the treatment of tuberculosis in the last twenty years has reference to the due appreciation of fresh air and sunlight. So much has been said upon this subject in recent years that it may not require further emphasis, except to bring into greater prominence the matter of direct solar therapy. It is not sufficient to have the patient out of doors with the ordinary clothing covering the body, nor even to have the body uncovered where the sun may shine upon the individual indoors. The writer well remembers when he was a boy, a strip of land on his father's farm which was constantly hidden from the mid-day rays of the sun because of a large forest which lay to the south. While the grain or grass on neighboring parts ripened to maturity and excellence, this strip made but a poor showing. Cultivation of the soil could not make up for the warmth and other effects of the direct influence of the mid-day sunlight. Not more important is it, however, for grain, grass or vegetables than for human beings. In recent years much money and ingenuity have been expended in obtaining various colored lights, through the influence of which startling results were claimed. The sun, however, is the father of lights, and all of these are contained in his white rays. Solar therapy, it is true, may not be good for everyone, but certainly it has proved the greatest advance in the treatment of tubercular conditions in recent times.

The writer's association with this work dates from 1888, and at the end of his first ten years he summed up the results of his observation and treatment of cases of hip disease, with the result that there was a mortality rate of about 10 per cent. The success of treatment in the second decade has been much greater, and the most careful scrutiny of methods attributes it chiefly to the greater use of direct sunlight. The patient is kept upon a cot, commonly spoken of as a Bradford frame. This is very readily carried from one place to another without disturbing the patient, and every day, whether in winter or summer, the patient is carried out of doors, so as to be as fully exposed to the sun's rays as is the grass. When the weather is suitable, the affected part is fully exposed without any covering. This can be done during the greater part of the year without discomfort, and even in winter the patients are left out in the sunshine from morning till night on suitable days, wrapped sufficiently to give the needed protection. In the summer-time in this climate there are few days when the temperature is so high as to cause discomfort. The head and eyes should be protected from the glare of the sun, and from the great heat by keeping the head either in the shade of some building while the rest of the

body is exposed, or by the use of a sunshade. If at any time the high temperature causes discomfort, then the patient should be carried into the shade. Also, at the commencement, the length of time during which the patient is exposed should be so graduated as to prevent undue sunburn. The time of exposure from day to day should be so managed as to bring about a condition of the body which will not permit burning. This may sometimes be avoided by keeping a single sheet covering the part, and the length of exposure thus be increased. The patient should at times lie upon the back, and after exposure in this way, should be turned upon the face, so that all parts may be reached by the direct rays of the sun.

The treatment by tuberculin has been employed to a moderate degree, but, within the limit of the writer's observations, it is doubtful whether it has been effectual in producing any improvement.

In the way of local treatment, the securing of rest is the most important indication, and this can be obtained more effectually in recumbency than by the use of any portable apparatus. When the recumbency meant confinement indoors, then the rest and quietness of the joint were secured at too great an expense. If the choice must be made between recumbency in bed and in a house, and an ambulatory treatment out of doors, the choice certainly is in favor of the ambulatory treatment. The best elements, however, of the two methods may be employed. In recumbency, the patient is kept upon a very simple cot, known as the Bradford frame, which consists of an oblong, rectangular frame, probably about a foot longer than the patient's height, and varying in width from 11 inches to 14 or 15 inches, according to the size of the patient. This is covered with a sheet of canvas, which is thrown across the frame and laced tightly down the back or bottom side. This forms a comfortable support upon which the patient reclines. At either end is placed a bracket or rod convenient for attaching straps for extension and counter-extension. It is our custom to keep the patient continuously recumbent on such a frame, not permitting the patient to rise from it, not even to the sitting posture, at any time. This is continued for many months without interruption. When necessary to use considerable covering, it may be wrapped directly around the patient and the frame, and secured by safety-pins. It is easy thus to protect the body, even during the coldest weather. A protecting cage should be thrown over the feet to prevent the weight of the bed clothing from resting upon them, causing a condition of equinus, or producing undue rotation of the limb, thus avoiding needless deformity. Also, a small pad or pillow should be placed under the knee, so as to maintain a few degrees of flexion. This adds greatly to the comfort of the patient and

prevents a degree of hyper-extension which has otherwise not infrequently resulted during the treatment of hip disease, and which has, in after-life, proved a very disabling condition.

It is well known that one of the most common deformities resulting from hip disease is due to adduction and flexion of the affected limb, and tilting upward of the pelvis on the affected side. This constant tendency toward flexion and adduction is almost universal, and even if these have been prevented during the early stages of treatment, they are apt to occur during the period of convalescence, and it is one of the highly objectionable, and yet preventable conditions, seen so frequently in after years, and then demanding operation as a remedy. Fortunately, these conditions are easily prevented without interfering with the comfort or rapid recovery of the patient. The most simple and yet thoroughly effective plan is to lace a comfortable anklet or gaiter upon the ankle of the affected limb, corresponding quite completely with the upper part of an ordinary shoe. At each side of this a buckle is placed, and a strap passes from one to the other around the rod or bracket at the lower end of the cot. This affords a very constant extension, which is agreeable, and which has not the inconvenient conditions attached which are found with a cord and weight passed over a pulley attached to the bed. Here the attachment is entirely to the cot, which is so easily picked up and carried away without disturbing the patient. Counter-extension is made by rolling a bandage around a comfortably-made pad, and placing this pad in the perineum, upon the side of the sound limb, and carrying the bandage up and fastening it to the bracket at the upper end of the cot. This method of procuring extension and counter-extension is never found uncomfortable if it be intelligently employed. The trouble and discomfort of various forms of sticking-plaster applied to the limb may be entirely avoided. Its effectiveness is seen in the fact that the deformity of flexion and adduction in any stage of the disease short of convalescence is readily corrected. Any ill-effect upon the knee from failing to pull directly upon the femur has not been observed. Injurious effects at the knee result, not from pulling at the ankle, and failing to make direct traction upon the femur, but from having the knee unsupported, so that it falls too far backward, and brings about a very disabling condition of hyper-extension.

Sometimes after recovery from the disease it is seen that the limb has rotated unduly, either internally or externally. This may be prevented by employing a protecting cage under the bed-covering to prevent the weight of the sheets from pressing upon the toes, causing needless inversion or eversion. Sand-bags may also be employed at the sides of the leg and foot to aid in greatly overcoming any undue rotation.

The writer finds it exceedingly common, when asked to see cases of hip disease, that deformity has resulted, and has been regarded as something not readily preventable. The method here outlined, however, may be said to be not only easy of application, but uniformly successful in preventing deformity.

In order that a child may be kept in the required position, it is well to place a girdle around the frame at the level of the shoulders, and attach obliquely two straps of webbing, which may be made to encircle the shoulders and be fastened with safety-pins, so as to prevent the child from rising to a sitting posture or from rolling over in sleep. It will be seen that all the connections are simply between the patient and the Bradford frame; consequently there is no disturbance in taking the patient from one position to another, thus avoiding highly objectionable movement at the diseased joint. The matter of nursing is very easily carried out if a thin and carefully-made bed-pan be employed. For the purpose of nursing, bathing, exposure to sunlight, etc., the patient may readily be rolled over, while holding the limb carefully, thus avoiding needless disturbance.

The writer feels confident that the management here outlined is the most successful means of correcting the deformities during the course of the disease, and of maintaining the desirable and essential conditions of relationship between the pelvis and the femur. By such means, also, the diseased head of the femur and the diseased acetabulum are not forced against each other, and the degree of extension employed prevents the muscles from forcing together the diseased structures at the joint. If this latter condition be permitted, the softened bone is often needlessly absorbed, and even when the head has entirely disappeared, as is not infrequently the case, the femur may be kept down in its relation to the pelvis, permitting a desirable ankylosis to occur, so as to result in a limb actually much longer than would otherwise be secured. When mere fixation of the joint is sought for, as, for example, by employing a well-fitting plaster-of-Paris spica, either when confining the patient to bed without extension, or permitting the patient to walk about, bearing his weight upon the affected limb, the absorption of bone and needless shortening of the limb are caused. When moderate traction, together with recumbency, is employed, not only are the ill-effects of pressure of joint surfaces avoided, but also great gain may be effected, even after the integrity of the joint has been destroyed. This may be well illustrated by the following case, now under observation:

Miss H. A., fourteen years of age, seen in April, 1908. The history makes clear the fact that there were well-marked symptoms of hip disease three years previously. In the interval she had been confined to bed for several weeks, and upon some improvement

manifesting itself, she had been allowed to be up and moving about again. In a general way, this vacillating policy had continued till December, 1907, when there was an unusually severe exacerbation, and upon being visited by her attendant it was found that much shortening of the affected extremity had suddenly occurred, or at least had not been previously observed. She had been kept recumbent until the writer saw her in April. There was great tenderness, and it was reported that it had been impossible to make a careful examination. Little difficulty in this way, however, was experienced, and the limb was found to present one and a half inches of actual shortening. There was also a collection of fluid at the level of the great trochanter, lying at the outer side and behind.

The girl was at once removed to the Orthopedic Hospital, and the method of treatment here advocated has since been employed. She has also had two injections of iodoform into the sac containing the fluid collection. At the present writing, all indications of fluid have disappeared. The tilting of the pelvis has been corrected. The femur has been drawn downward in its relation to the pelvis, so that the stump of neck is in apposition with the acetabulum, and it is being retained in that position, as shown by a radiograph. There is apparent lengthening of the limb, amounting to about a half-inch, through tilting of the pelvis. There is also about a half-inch of actual shortening, as seen in making measurement from the anterior superior spines to the malleoli.

It is the opinion of the writer that it is but seldom that the effect is brought about which has been here outlined, namely, to bring down the femur after the neck has once ridden above the level of the acetabulum. In this way the stump of neck remaining is brought to the normal position, where ankylosis is being effected. A general improvement in the girl has been manifest from the first, and her constitutional state is of the best. For the intervening months she has been regularly exposed every day from morning till evening to the solar rays.

The gain sought for and obtainable by the method of extension here advocated is evidenced in two ways: First, the affected limb is drawn downward, and the pelvis of the sound side is drawn upward. This maintains, during the time of treatment, abduction of the affected limb—a most important matter, when it is remembered that a very large proportion of the deformities of after-life following hip disease are due to adduction. In a later part of the paper it will be explained how this abduction is maintained during convalescence by the use of a hip brace. Second—The second element of gain referred to above is illustrated in the report of the case of Miss H. A., showing how the femur has been drawn down so as to bring the remaining portion of the neck into apposition

with the acetabulum, so as to secure ankylosis in a greatly improved position

Had the plan been adopted, which has been so strongly advocated by some writers, in order to secure ankylosis, of using the plaster spica, so as to maintain the relationship between the femur and the pelvis, this changed relationship between the femur and the acetabulum could not have been effected.

Loss of bone from disease and tilting upward of the pelvis on the affected side are not the only causes why the affected limb is made practically shorter than its fellow. During the course of disease in growing children, likely to be prolonged for several years, there is a marked lack of proportionate growth in the affected limb, so that this becomes another important factor to be reckoned with, and is a cause why the cure should be hastened as much as possible. In some cases where the actual shortening, through the loss of bone and lack of growth, has amounted to as much as two inches, it has been found, upon recovery, that no cork was necessary under the foot of that side, because the pelvis had been tilted downward on the side of the affected limb to an extent varying from one to two inches. In this way the actual shortening may be largely or entirely made up, and either a smaller amount of cork than otherwise required will prove sufficient, or in many cases the patient prefers to avoid it altogether.

If the principles of treatment here laid down, however, be consistently followed out, it will be found in most cases that shortening will be much less in extent than the amount just referred to because the period of treatment will be much shorter, and there need not be deformity through the riding upward of the femur in its relation to the pelvis.

There is one form of treatment which has been employed for many years, but which has been spoken strongly against in certain quarters, and which may be considered both local and constitutional, viz., injection of iodoform. Suspended in glycerine, it has proven a valuable aid. For twenty years this method of treatment has been employed by the writer, who has come to have the greatest confidence in its efficacy as a remedial measure. One may not be able to explain fully the method of action, nor is that essential, if the clinical evidence is clear as to its efficacy. It does not require a large stretch of the imagination, however, to hold that the nascent iodine which is set free from the iodoform should prove effectively a bactericidal agent.

In cases where, through neglect or from other causes, there is a very great amount of infiltration and tenderness at the hip joint, it is seldom found necessary to use any measures other than those just outlined. Under the very satisfactory rest which may be obtained, the tenderness and infiltration soon passes away. Some-

times, however, a carefully 'applied plaster spica, extending from the toes to the crest of the ilia, and retained for a few weeks, while recumbency also is maintained, will be found a useful help.

The treatment by recumbency and sun exposure should be continued throughout the acute stage of the disease, until there is very positive evidence that cicatrization has well taken place. In nearly all cases the period that should thus elapse will amount to several months, and possibly it may extend into years, though, from the writer's experience, a longer time has never been required. Where doubt exists as to the condition of the tissues that will have to bear the body's weight, it is better to err upon the side of continuing the recumbency for a longer period of time. When deemed proper, however, to make the change, an effective brace should be employed, which will prove both a crutch to carry the body weight and an extending force to maintain traction upon the affected limb. The brace necessary for this purpose is exceedingly simple. It consists of a firm steel band, padded, which passes around the pelvis just above the level of the great trochanter, and a leg bar, secured without a joint to the pelvic band referred to, passes down the outer side of the leg to the bottom of the foot, and has a bolt which passes through a tube firmly inserted in the heel of the boot. Two perineal straps, passing from front to rear of the pelvic band referred to, afford counter-extension. In the application of this brace the pelvic band, passing under the perineum of the sound side, is kept tighter than the other one, in order to afford counter-extension upon the sound side, while the bolt in the heel of the boot makes extension of the affected limb. In this manner, a brace so simple will effectually prevent recurrence of adduction. When in bed at night the brace may be left off, and the Bradford frame, with extension, may be employed as it was used in the treatment of the acute stage of the disease.

The following is a brief statistical statement of cases referred to above as coming under observation since 1898:

The total number traced, 166.

The number of deaths were 8, as follows:

1. G. M. A man of about thirty years of age, who had an inoperable tumor in his neck, of which he died. The condition of the hip was improving.
2. M. M. C. A girl eight years old, died from asthenia, as a direct result of the disease.
3. S. S. A man twenty-five years of age; died of tubercular meningitis; hip at the time of death not improving.
4. R. P. A boy eighteen years of age, double hip disease. Died of asthenia and extensive suppuration.
5. C. S. A child, died of diphtheria.
6. W. L. A man twenty years of age; had had hip disease when a child; died of pulmonary tuberculosis.

7. F. D. H. A man thirty years of age; died of pulmonary phthisis.

8. A. Mac. A man thirty-six years of age; died of pulmonary phthisis.

From the foregoing it will be observed that the death rate due directly to hip disease is exceedingly small.

In two patients amputation was made at the hip joint. These were boys of about ten and twelve years of age. Extensive suppuration had continued for quite a long time, and recovery without amputation was deemed improbable. Both cases responded quickly and have made good recoveries.

What may be called fairly a first-class recovery has occurred in fifty-six of the patients. Such a term may be considered somewhat indefinite. A small proportion of these have good motion at the hip joint, have practically no shortening and do not wear any cork boot. One and all of these are actively engaged in the various concerns of life and find themselves but little hampered. Some others of this number have complete ankylosis at the hip joint in a good position. A favorable position in such instances is one where there is about fifteen degrees of flexion and some amount of abduction. Real shortening is nearly always present in these cases, but the abduction so compensates for the actual shortening as to permit many of them to go about without the use of a cork boot. Some few others find it necessary to wear a patten under the boot. In this way I have tried to define what I mean by first-class recovery.

Only seven would be classed as making a really poor recovery. Some of these have a femur that is movable upon the pelvis, so that a support worn constantly is necessary. Others have continued for a long time to have sinuses, or in some other ways still remain much disabled.

The remainder have made recoveries which enable them to engage to a greater or lesser extent in the varied activities of life, being somewhat hampered, however.

Still under treatment, of the number referred to, are eighteen. On the average, these have a better prospect than those who came under treatment at an earlier date.

In the case of those who have been treated as above the average time of confinement to the cot described has been between six and seven months. The shortest period of time was one month, employed for the purpose of correcting deformity. The average time during which they have worn the extension brace is thirteen months. One patient, after having a brace for nearly a year, had to be placed upon the cot in order to overcome the needless shortening which in his case could not be corrected by the brace. He was kept upon the cot for three months, then returned to his brace,

which he used now with more care and intelligence. His recovery has been an excellent one, with nearly two inches of shortening, but with such an amount of abduction as permits him to walk very well without the use of any cork.

Briefly, the treatment may be summarized as follows:

1. Hip disease, as ordinarily spoken of, implies tuberculosis at the hip joint.

2. Constitutional treatment comprises:

(a) The suitable use of drugs.

(b) A skillfully arranged dietary, in which fats should hold a prominent place.

(c) Direct solar therapy has proved the most important agent. It should be continued throughout the whole day every day and for many months. The affected parts, and as much of the body as possible, should, in the nude state, be exposed directly to the sun's rays.

3. Local treatment comprises recumbency upon the Bradford frame, affording an opportunity to secure:

(a) Efficient rest.

(b) Traction to correct deformity, to prevent adduction and flexion, and to bring down the femur to a correct relationship with the pelvis.

4. A brace which will serve both as a crutch and as a means of preventing the recurrence of adduction and flexion, the brace to be worn until complete convalescence has resulted.

THE VALUE OF THE REFLEXES IN DIAGNOSIS.*

BY J. S. RISIEN RUSSELL, M.D., LONDON, ENG.

Mr. President, Ladies and Gentlemen:—It has been my good fortune to receive many kindnesses from our profession, and it has been my privilege to address distinguished audiences. Fully as I appreciate the honors I have enjoyed, and grateful as I am of the consideration that has been extended to me in the past, I feel that the honor your Council has done me far exceeds anything that I have hitherto experienced.

I can imagine no greater compliment than to be entrusted with the delivery of the Address in Medicine at so important a meeting as the Canadian Medical Association is holding in Ottawa to-day, and I am confident that those who have been good enough to honor me in the past would be the first to admit that the position in which your Council has now placed me is the most honored I have ever filled.

There are, Sir, some moments that cannot find adequate expression in words. My gratitude is very sincere, but I am too conscious of my inability to find a portal sufficiently wide to convey the full depth of my feelings, to make me risk the attempt that would be sure to end in failure.

No words of mine can ever thank you enough for the great honor which you have done me.

When attempting to decide upon what subject to address you it naturally occurred to me that it must be on something of neurological interest, as it was improbable that any general survey of medicine would be expected from one who had devoted so much time to a special department.

On reviewing the neurological subjects that seemed most suitable, the usual difficulty was experienced in deciding which to select. It was not without many misgivings that the value of the reflexes in diagnosis was finally chosen as likely to be the most profitable, for I am very conscious of the large amount of work of the greatest possible excellence that has been done on this side of the Atlantic. Three considerations mainly encouraged me to adhere to my decision. One was that the same objection could be urged in regard to any subject I might choose. Another was that so much work has been done on the reflexes during recent years, and so much that is contradictory has been written about them, that there is a danger that the profession may become skeptical as to their value. The third consideration that influenced me was that

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so many new methods of diagnosis are now in vogue that there may be too great a tendency to rely on these to the exclusion of the reflexes, which they should only be allowed to supplement, not supplant.

We cannot too carefully safeguard the reflexes, for we can ill afford to do without them, and what is especially satisfactory to the practitioner is that no laboratory or special apparatus is needed when applying the tests necessary to derive information from them.

When selecting the subject I did not lose sight of the fact that there would be many present at this meeting to whom I could not presume to offer any remarks that would either prove of interest or profit, but it seemed certain that the bulk of those attending the congress would be men busily engaged in the toils of general practice, with but little leisure for reading. Much as you may be interested in the scientific investigations of the age, and the great discoveries that are constantly being made, you naturally wish to know how far the results obtained by these researches may be utilized by you in your endeavors to minimize the sum total of human suffering and to promote the general well-being of the community.

I cannot help feeling that those of you who have perused the literature that has grown up around the subject of the reflexes must be inclined to doubt the value which attaches both to the tendon-jerks and the superficial reflexes in diagnosis, for fresh from reading a paper in which the author insists on this or that phenomenon as a sure sign of organic disease, you take up another in which the writer as confidently asserts that certain alterations of the reflexes have not the value that has been ascribed to them, as he has met with the abnormal sign in functional as well as in organic conditions of the nervous system. You accordingly find it difficult to decide which of the conflicting statements to believe, for the opportunities of putting these matters to the test do not occur sufficiently often in your practice to permit of your coming to any satisfactory conclusion from your own observations.

It is, therefore, natural that you should look to those whose work brings them into daily contact with these problems, and who have endless opportunities of testing the conflicting views expressed by different authors, to assist you to decide what is true, and what is not; on what evidence you may place confidence, and what you should mistrust and discard.

It thus seems probable that no better use can be made of an opportunity like the present than to attempt to show that, in spite of much that you may see written to the contrary, the reflexes are of the utmost value in the diagnosis of affections of the nervous system.

Time will not permit me to quote cases in support of what I have to say, but I can assure you that all the facts to which I

propose to call your attention are based on practical experience of these matters, and that actual cases which substantiate the statements occur to me as I recount the facts which I deem worthy of your acceptance as likely to prove helpful to you in the problems that confront you from time to time in the routine of your practice.

An attempt will be made to show that the reflexes are of value:

1. In the diagnosis of organic from functional affections of the nervous system.
2. In the diagnosis of one organic disease from another.
3. In localizing the seat of the morbid process.
4. In determining the extent and severity of the mischief.
5. That there are limitations to the value of the reflexes.
6. What part they play in the diagnosis of maladies outside the realms of neurology.

It will, of course, be impossible to deal with all of the reflexes in the time at our disposal, and it will be equally impossible to discuss more than some of the more important aspects of the subjects I have outlined, without pretending that any exhaustive consideration of them in their many bearings is at all possible.

1. DIAGNOSIS OF ORGANIC FROM FUNCTIONAL AFFECTIONS.

One is inclined to question either the observation or the judgment of the author who, having elicited the extensor type of plantar reflex after an attack of convulsions, nevertheless concludes that the attack has been hysterical and not epileptic.

That true epilepsy may occur in a person otherwise hysterical, and that an epileptic attack may be followed by an hysterical state, are facts too well recognized to call for more than passing notice; but it is difficult to refrain from a desire to have the opportunity of observing the attack from its inception to its conclusion, before accepting the statement that hysteria was alone responsible for the convulsions which permitted the extensor type of plantar reflex to be elicited in the subject of the fit.

Abolition of the knee-jerks, followed by their exaggeration, coupled with ankle clonus, and supported by the extensor type of plantar reflex, form a combination which we have good reason to agree must be aids to the diagnosis of genuine epilepsy, as contrasted with either hysteria or malingering.

It is equally difficult to accept the opinion of the observer who asserts that the paralysis from which the patient suffered was hysterical, and yet the plantar reflex was of the extensor type, especially when he has no better proof to offer than that the patient got quite well, and that this phenomenon, like all the other abnormal signs, disappeared.

The names of such distinguished authorities are associated with statements of this kind that the only way which seems possible to reconcile their views with one's own experience is to suppose that

certain types of disseminate sclerosis, so common with us in England, must be rare in other countries, so that the vagaries of these varieties of the malady so much insisted on by Dr. Thomas Buzzard in his writings on the subject, have not as yet been recognized by observers who are mistaking for hysteria cases that are in reality examples of disseminate sclerosis. That this is so in some instances is evident even from the information given of the clinical history of the patient's illness. The remarkable way in which the clinical picture may clear up in a case of this disease after the most pronounced signs of organic change have been determined, makes it difficult to believe otherwise than that there is a time in the course of the malady when the lesion is of a kind that permits not only of restitution of function, but also of repair of structure, so that the nervous system is not only able to perform its work again in a normal manner, but is also free from any evidence of persisting structural damage.

These considerations open up a most interesting question that I dare not do more than touch on in connection with the diagnosis of neurasthenia. May not a functional condition of the kind occasion nutritional changes in the nervous system sufficiently profound to lead to alterations in the reflexes that are indistinguishable from those produced by organic disease?

Time will not permit me to discuss this matter in the way that its importance demands. Let me but say that from the practical standpoint it matters but little, for the majority of cases of neurasthenia present no such difficulty in diagnosis, and if such a condition of things as has been suggested be possible, there would be every reason to regard with as much concern the nervous system of such a patient as that of one suffering from some known organic disease, for such a condition cannot but be attended by grave consequences if unchecked by treatment.

2. THE DIAGNOSIS OF ONE ORGANIC DISEASE FROM ANOTHER.

Let us take a common example. A patient experiences difficulty in walking, owing to the inco-ordinate condition of his lower limbs. Two of the most common diseases likely to be responsible for this are tabes dorsalis and disseminate sclerosis.

How quickly it can be determined which of these diseases exists! No knee-jerk, no ankle-jerk, and the plantar reflex not altered to the extensor type in tabes make striking contrasts to the exaggeration of the knee-jerk; exaggeration of the ankle-jerk, amounting, it may be, to clonus, and the plantar reflex of the extensor type in disseminate sclerosis.

Even if, in the latter disease, the knee and ankle-jerks fail us by being absent instead of being exaggerated, the plantar reflex is not likely to play us false. And if it does, is there not still the pupil reflex on which we can fall back for assistance? The pupil

which fails to re-act to light while it preserves the possibility of re-acting on accommodation, is a phenomenon sufficiently rare in disseminate sclerosis, and common in tabes, to make it a further point of contrast between these two diseases.

Take another example. The patient has atrophy of the small muscles of the hand. One of the first things we are anxious to know is whether or not the reflexes are altered, for much depends on whether they are, both in regard to diagnosis and prognosis. Exaggerated knee-jerks, ankle-clonus, and the extensor plantar reflex tell their tale, for it is clear from them that the spinal cord is involved by the morbid process that is responsible for the muscular atrophy. Thus, by testing these reflexes, we at once glean information that is of the greatest import. By testing the arm-jerks and the jaw-jerk, the diagnosis may be carried a stage further, for in the presence of an exaggerated jaw-jerk or clonus there is little likelihood that any condition other than amyotrophic lateral sclerosis is to be held accountable for the muscular atrophy. Although the Rontgen rays have done much to facilitate diagnosis under these conditions, it cannot be said that they have in any way robbed the reflexes of the value that attached to them before the rays were put to such use. It may be safely said that the rays have supplemented, not supplanted, the reflexes in this sphere of their usefulness, for while they may reveal an accessory rib, caries or other disease of the cervical vertebrae to account for the muscular atrophy, in the absence of these conditions they cannot tell us whether the atrophy is of central or of peripheral origin, nor can they further give us the good idea the reflexes can as to which of the several affections of the spinal cord is likely to be responsible for the condition.

Two affections that may easily be confounded, and that present considerable difficulty of diagnosis at times, although at other times the clinical pictures are so widely different that there is no possibility of confounding them, are cerebellar tumor and disseminate sclerosis. A proper appreciation of the different behavior of the reflexes in the two conditions will go far towards clearing up the question that is in doubt; indeed, the diagnosis may largely, if not entirely, depend on what, if any, alterations are determined in the reflexes. While various alterations of the tendon-jerks obtain in tumor of the cerebellum which may accord with what is found in disseminate sclerosis, the superficial reflexes prove of distinct service in differential diagnosis, for the plantar reflex commonly assumes the extensor type at an early stage of disseminate sclerosis, while it only does so as a late event in a case of tumor of the cerebellum, and is then to be ascribed to some complication rather than to the morbid condition of the cerebellum itself.

The reservation that has had to be made in regard to the plantar reflex does not apply to the other superficial reflexes on which

a diagnosis may be based, for, assuming that the local conditions of the abdominal walls be such as to permit the abdominal reflexes to be obtained, their absence may be regarded of considerable importance in diagnosis, for, while they are unaffected in cases of tumor of the cerebellum, they are absent in a large proportion of cases of disseminate sclerosis. The reflexes may thus serve to determine whether we are in the presence of an affection in which operative intervention may be expected to bring relief, or whether the morbid condition is one in which operation would not only be useless, but actually harmful.

It is impossible to leave this part of our subject without referring to the value that attaches to the extensor plantar reflex in the diagnosis between multiple peripheral neuritis, in which it is absent, and that fatal disease, subacute combined degeneration of the spinal cord, in which it is present, for, while the former condition may be expected to result in recovery under appropriate treatment, the latter runs its course to a fatal termination with unerring certainty in most, if not in all, cases.

3. LOCALIZING THE SEAT OF THE MORBID PROCESS.

The abolition of the reflexes in affections of the peripheral nerves, the variety of ways in which they may be affected in diseases of the spinal cord, and their unilateral exaggeration, diminution or special modification in affections of the brain, need no more than passing notice. It is impossible, however, to leave this part of our subject without a word of comment in regard to the part the reflexes play in the early diagnosis of morbid conditions of the brain and spinal cord, for it repeatedly happens that some departure of the reflexes from the normal standard is the first indication that we have, not only that organic disease exists, but as to what part of the nervous system is affected. Special note must also be taken of the important *role* they play in the localization of focal lesions of the spinal cord, in which connection nothing is more important than the aid to be derived from them in the diagnosis and localization of tumors of the cord.

The abolition of the reflexes which correspond to certain segments of the cord, the escape of all the reflexes above this level, and other exaggeration or other modification below it, must be regarded as the most valuable indication we have in determining the position of a focal lesion.

Similarly, unilateral alteration of the reflexes may be the first indication of which hemisphere of the brain is affected, and, while it may happen that hemiplegia or some other condition makes it superfluous for us to seek assistance from the reflexes, there are cases in which there is so much uncertainty that every source from which information can be gleaned must be welcomed, and then it is that the reflexes may prove invaluable. No better example of this

can be found than what obtains in tumors of the frontal lobes of the brain. The difficulties of localization in such cases may prove well-nigh insurmountable, so that unilateral exaggeration of the knee-jerk or the appearance of ankle clonus on one side is welcomed. Of similar significance is the appearance of the extensor of the plantar reflex, or, as my colleague, Dr. Grainger Stewart, has shown, diminution or abolition of the superficial abdominal reflexes on the side opposite to that on which the tumor is situated.

Another class of case in which the reflexes may prove helpful is that in which the question to be decided is whether the disease is in the cerebellum or pons. The determination of this point becomes particularly important when a tumor is responsible for the symptoms, for, while those which occupy the pons are inoperable, no more successful class of intracranial tumor is met with from this standpoint than many of those which involve the cerebellum. They supply us with some of the most brilliant results of modern surgery. While there are many points on which the diagnosis must rest, it is not too much to claim for the reflexes that they play an important part in deciding the question at issue, for the earlier they become affected in the clinical history of the case, the more likely is the tumor to be situated in the pons, while the longer they remain unaltered the greater is the likelihood that the seat is the cerebellum. The knee-jerks cannot be said to be of material assistance in this connection, for, as already noted, they may become altered in uncomplicated cases of tumor of the cerebellum. It is, however, otherwise as regards ankle-clonus, and alterations of the superficial reflexes, for unilateral diminution or abolition of the abdominal reflexes, or alteration of the plantar reflexes to the extensor type, cannot be regarded otherwise than of importance in diagnosis, if they are determined sufficiently early in the clinical course of the patient's illness to make it improbable that they are the outcome of some complication rather than due to the original malady.

4. THE EXTENT AND SEVERITY OF THE MISCHIEF.

It would appear to be self-evident that, inasmuch as the various reflexes have different segments of the spinal cord on whose integrity they depend, the fewer that are lost the less extensive the lesions, and the wider the extent of their affection, but more widespread the distribution of the morbid process. It must be clearly recognized, however, that this is by no means necessarily the case, for, in reality, this only applies in some instances, for a very limited lesion may give rise to widespread alterations of the reflexes. Take, for example, a case in which the lesion is limited to the cervical region of the cord, and abolishes the scapulo-humeral and other arm reflexes. Many other reflexes will also be altered, though not necessarily abolished, so that among the abnormal phe-

nomena to be looked for are exaggeration of the knee-jerks, ankle clonus, and the extensor type of plantar reflex.

No better example of the value of the reflexes in determining the severity of a lesion can be suggested than is supplied by the knee-jerks in cases of transverse lesions of the spinal cord above the lumbar enlargement, for when, instead of being exaggerated, they are abolished and remain absent, the gravest fears are justified. When the knee-jerks do not return there is every reason to fear a severance of the cord so complete as to preclude the possibility of re-establishment of the paths through the damaged segments of the cord. Ankle clonus, a phenomenon that we view with concern under other conditions, would now be welcomed, as this would indicate possibilities of recovery which would not have been justified had the knee and ankle-jerks remained absent.

5. LIMITATIONS TO THE VALUE OF THE REFLEXES.

There are instances in which the reflexes only partly clear up the diagnostic problem. Take, for example, a case of myelitis with paraplegia as the result. From the reflexes alone the diagnosis may be made as to whether ordinary myelitis or polio-myelitis exists, but further than this they cannot take us. The X-rays may reveal tuberculous disease of the bone, which has not as yet produced spinal deformity, or the opsonic index may raise the suspicion of a tuberculous origin of the paraplegia in a way that is impossible to the reflexes.

Similarly, syphilitic pachymeningitis may not as yet have occasioned any alteration in the reflexes by which an organic condition can be diagnosed, and yet lumbar puncture may permit the determination of leucocytosis that allows a positive diagnosis to be made. Or the behavior of the superficial reflexes may justify the diagnosis of an organic hemiplegia, while it requires the ophthalmoscope to say that a tumor is responsible for it, or lumbar puncture to indicate that the thrombosis which underlies it is of syphilitic origin.

Furthermore, it must be remembered that there are some affections of the nervous system in which a diagnosis is to be made without any necessary assistance from the reflexes. Chorea supplies an example, for, although in this affection the special alteration of the knee-jerks, to which Gordon, of Exeter, called attention, may be present, in which the limb remains suspended in mid-air too long in response to a blow on the patella tendon, the diagnosis has to be made without any such assistance from the reflexes in the majority of cases. The extensor of the response, and special alteration of the superficial reflexes to which Babinski called attention, are too infrequent to justify any reliance being placed on them.

The fact must not be lost sight of in this connection that the negative may be of little less value than the positive in some cases,

and that, accordingly, there are instances when the fact that the reflexes are not affected in a case proves almost as helpful as if they were, for this serves to distinguish the malady from one in which alterations of the reflexes were to be expected.

6. THE PART THEY PLAY IN THE DIAGNOSIS OF GENERAL DISEASES.

The question that next arises is as to whether the reflexes give any assistance in diagnosis in realms outside those of neurology. There can be no doubt that there are many cases in which, in the absence of any known disease of the nervous system, the reflexes are altered in the course of some general disease or special affection of some other organ of the body.

It will be remembered that in an affection like diphtheria absent knee-jerks may give the first clue to the nature of a sore throat that ought to have been long since determined by bacteriological examination of secretion from the fauces. Similarly, absence of the knee-jerks may call attention to the possibility of glycosuria, which routine examination of the urine should have forestalled.

Some attempt has been made to derive direct advantage from alterations of the reflexes as in favor of one as opposed to another disease in which the nervous system plays no part, except that the toxins of the one malady have a more profound effect on the nerve centres, and occasions alterations of the reflexes in consequence, in a manner that does not obtain in the other disease. Thus, the knee-jerks have been found absent in a large proportion of cases of pneumonia due to the diplococcus or the diphtheria organism, while they are not affected in septic pneumonia and found exaggerated in tuberculous cases (Stanley Barnes.)

The chief value, however, that attaches to these observations in the present state of our knowledge is that they prevent us from concluding that some organic condition, as, for instance, myelitis or meningitis, has of necessity developed because these alterations in the reflexes are determined. Those interested in the welfare of the patient are thus spared the anxiety that would be caused by the opinion that might have been expressed in ignorance of the fact that the alterations noted are compatible with transitory effects due to toxic conditions without any permanent organic change.

In conclusion, Mr. President, ladies and gentlemen, let me thank you most sincerely for the patient hearing you have given me. No one is more conscious of the shortcomings of this address than I am. I wish it had been possible for me to prove more worthy of the trust that has been placed in me, and the honor which that trust implies. I can only take comfort in the fact that I have spared no pains to make the address a success, so that any failure to do so cannot be ascribed to a lack of appreciation of the great responsibility which I have accepted, and of which I have been only too

painfully conscious. One other consideration brings me comfort in my ordeal; that is, that I am in the midst of friends who will deal leniently with my shortcomings. In his letter of invitation your worthy Secretary, Dr. Hacking, told me that I would meet many friends who would be ready to welcome me to Canada. I have, indeed, met with friends, and have been overwhelmed with kindness. Let me take this opportunity of thanking you all most cordially for the welcome you have so generously extended to me.

Selected Articles.

THE FUTURE SCIENCE OF MEDICINE.

BY J. MADISON TAYLOR, A.B., M.D., PHILADELPHIA.

UNDER the above heading the St. Louis *Medical Review* of June 8, 1907, published the following lines: "Dr. C. E. de M. Sajous announced on June 3rd, at the American Medical Editors' Association, the crowning point of his patient labors on the ductless glands, in the discovery in the pituitary body of a membrane functionally resembling the Schneiderian (its olfactory area), in that it tested the condition of the body fluids and automatically regulated the correction of depraved conditions by producing antitoxins. Complete details by the author will appear shortly. It seems probable that an *absolutely scientific therapy* is now within sight." The announcement referred to was made at the dinner of the Association, which took place on the day mentioned. The complete details are to be found in the second volume of Sajous's "Internal Secretions," which has since appeared. The great interest awakened by his address, and the recent announcement that "Internal Secretions" was regarded on the Continent of Europe as so marked an advance in our knowledge of the functions of the ductless glands that it is to be translated into French by one of the greatest authorities on the anatomy and histology of these organs, Professor Launois, of Paris, who has suggested the advisability of giving our readers an outline of the function referred to above, which will unquestionably revolutionize medicine in the sense specified by the St. Louis *Medical Review*.

As is now generally known, Sajous's study of the functions of the ductless glands was only an incidental feature of his purpose to give medicine a more solid foundation than that upon which it rests at the present time. Nearly twenty years ago, when, as editor of the *Annual of the Universal Medical Sciences*, it became his duty to collate yearly the progress in all branches of medicine, he was surprised to note the amount of theorizing being indulged in by investigators in every branch of medical science: physiologists, physiologic chemists, histologists, therapeutists, clinicians, etc. After reciting a few experiments on

clinical observations, and giving a perfunctory and often very imperfect review of the literature of the subject, authors of unquestionable merit would not hesitate to launch forth tentative deductions on every conceivable subject, until our knowledge of any question became literally congested with discordant figments of imagination. Whether these new theories might not become flagrant misfits when everything became ultimately known of the questions to which they were appended was not taken into account of the authors; they had launched "*something original*," and on the strength of the frogs and guinea-pigs used in the experiment, or the few clinical observations quoted, and that something was assured by them to be immensely "scientific." It is to this fundamental defect that Sajous ascribes the present deplorable condition of medicine, which he compares to that of art during the Dark Ages. What has been justly termed by an editorial writer in the *New York Medical Record*, "Osler's black, hopeless, helpless, therapeutic pessimism," has, in his opinion, no other cause. He holds that if we are forced to admit to-day that Skoda's well-known dictum that "we can diagnose disease, describe it, and get a grasp of it, but we dare not expect by any means to cure it," still holds good, it is because much that is valuable in the work of modern investigators is hidden under the maze of false and misleading conclusions with which they have encumbered medical lore.

How can confidence in medicine as the "healing art" be restored? Can it be achieved through the sacrifice of yet more frogs, more guinea-pigs, by more laboratory guesses—the addition of a few more theories to the thousands that have driven medicine to practical bankruptcy? Sajous concluded that but one course afforded any chance of success in this direction, viz., to cast aside all theories, and with the aid of the huge aggregation of positive facts, experimental and clinical, actual results, etc., recorded by reliable investigators in all branches of medical science, *seek the solution of all admittedly undiscovered functions* even as a mathematician deals with a series of problems which he may wish to solve. By this plan, he avoided entirely the pit into which investigators had hitherto fallen, *i.e.*, that of being inspired by any preconceived theory, while giving all experimental and clinical facts their legitimate place in the process—*e.g.*, the place filled by the bricks, stones, wood, mortar, metals, etc., used in the erection of a building. This involved the use of logic, *i.e.*, of analytic and synthetic reasoning, which, according to Sajous, are utilized too sparingly by modern investigators. The great French biologist, Milne-Edwards, wrote many years ago: "The history of science teaches us to do justice to the modest investigators whose patient labors have furnished us the materials

thanks to which *generalizing minds* have been able to construct the scientific edifice. But, above all, it teaches us to appreciate those men who, avoiding vain speculations, and reasoning only from well-established facts, have been able to encompass the aggregate of these phenomena within their field of vision and point to the general and constant relations which unite them one to the other." That synthetic philosophy is a *sine qua non* of this, the highest and most difficult mission which any scientific man can undertake, is abundantly obvious.

It is to his *analytic* work that Sajous owed the discovery that the underlying cause of the existing confusion in medicine was due to the prevailing lack of knowledge concerning the functions of the ductless glands: it was his *synthetic* work which led him to the discovery of the true rôle of these organs in the body. As soon as these functions had been established by him, *hundreds* of problems, ninety-six of which he enumerates in the introduction to his second volume (and any one of which would qualify him to earn the gratitude of posterity), found a ready solution, the experimental results of a multitude of investigators thus falling into line, as it were, of their own accord. Pulmonary and tissue respiration, absorption and nutrition, the circulation of the nervous system (Harvey having discovered that of the larger vessels and Malpighi that of the capillaries), the nature of organic function and the manner in which it is awakened by vasodilator nerves, the composition of ferments, the physiologic and morbid production of sleep, etc., are but a few of the many problems which physiologists had admittedly failed to solve, as is well illustrated by Osler's remark, that while we know little concerning the action of drugs, "we put them into bodies the action of which we know less."

When once all these problems were solved, and the solutions proven correct by the precision with which they all harmonized, a superb mechanism revealed itself to Sajous: that of the human organism *complete*, the functions of the ductless glands and the presence of their products in all organs having filled many deplorable gaps—those identical functions which physiologists and histologists, notwithstanding their painstaking labors, had failed to explain. The tendency of modern investigators to introduce hypotheses, tentative guesses, etc., on all topics was also explained: they had observed phenomena on all sides which, without a knowledge of the functions of the ductless glands, were unintelligible, and for which they supplied what appeared to them as plausible explanations.

A brief review of the main steps of Sajous's labors will not only serve to illustrate all these facts, but it will lead up to the crowning feature of his work, viz.: the discovery of the process

through which the body antagonizes disease by providing the blood with what he has termed its "auto-antitoxin:"—

Adrenals.—Sajous found that these organs supplied a secretion which passed to the lungs and took up therein the oxygen of the air. This solved the cardinal problem of human functions: that of pulmonary respiration. Physiologists had also failed to discover the identity of 94 per cent. of the hemoglobin molecule. This likewise proved to be the oxygenized adrenal secretion. The nature and the source of an oxidizing substance found in the blood, oxidase, had also remained undetermined. Sajous found that this substance, the (albuminous) 94 per cent. of hemoglobin, and the oxygenized adrenal secretion were one and the same; that all tissues contained it; and that it was this substance which supplied the tissues with oxygen. He discovered another important fact in this connection, viz., that it was the adrenal active principle, thus distributed to all cells, which sustained their life—the principle which Herbert Spencer deemed necessary to account for the vital process (his "dynamic element of life"), but the presence, source, and identity of which were to him unknown. Dr. Sajous has thus solved simultaneously the problems of tissue respiration and cellular life. The importance of these discoveries from the standpoint of practice cannot be overestimated, for, as we will now see, we are able *with our remedies* to govern the adrenals, and therefore *oxygenation* of all cells and the *life process* itself where its activity is subnormal.

Thyroid Gland.—As is now well known to all physicians, thyroid extract given to a cretin or an idiotic child in whom the functions of the thyroid gland are deficient, brings about a wonderful change. The body soon begins to grow, all the functions are remarkably stimulated, and the brain, practically inactive before, assumes its physiologic rôle as the organ of thought. What amounts to a mere "human plant" is finally transformed into a normal child, and remains such, but only so long as thyroid extract is administered to it. Now, thyroid extract has long been known to enhance actively the body's oxygenation. But how does it bring about this result? How does it produce the wonderful transformation in the cretin? Sajous also solved this problem. He found that *the purpose of the thyroid secretion was to excite a center in the brain* (to which reference will be made presently) connected with the adrenals by nerves, and that it was therefore by stimulating indirectly the adrenals that the thyroid extract produced its wonderful effects.

It is here that the great practical importance of Sajous's discoveries is demonstrated. Not only did he find that thyroid extract excited the adrenal center, but that several of our remedies, iodine, the iodides, mercury, coca, and others, did likewise.

The unexplained physiologic action of these remedies in combating some of the most destructive diseases of mankind thus became clear; they increased the oxygenizing power of the blood and the activity of the vital process, and thereby the power of the body to fight disease and destroy pathogenic bacteria, the poisons they secrete, toxic wastes, etc.

The thyroid gland was also found by Sajous to be the source of a substance which has been receiving considerable attention of late—Wright's "opsonin," known to sensitize bacteria and render them vulnerable to the attacks of phagocytes—those white cells or leucocytes of the blood and lymph which act as the body's scavengers and do so much to protect it against infectious disease, as shown by Metchnikoff. This introduces another practical point of the highest importance connected with Sajous's discoveries, viz., the functions of the leucocytes.

The Leucocytes.—The white cells of the blood have been given several different rôles by physiologists, but Sajous was the first to show their true function: the identity of that which causes them to act as scavengers; to appear in great numbers in the blood under certain conditions, normal and morbid; to contain numerous digestive ferments, etc. He showed that their rôle in the body was to take up or "engulf" food-products of any kind, both in the intestinal canal (after the foods had been partially digested in the stomach and intestine) and in the blood and other body fluids; to convert these food-products into *living* granulations (through the adrenal principle which their ferments contain), and to transport them to the tissue-cells. Sajous thus contributed another great advance in our knowledge of cell-life: not only did he show the identity and source of the dynamic principle which sustains life, as previously stated, but also the process through which *our foods become endowed with life*, and, moreover, *the manner in which our tissues are built*.

The practical bearing of these discoveries is now made to appear: certain leucocytes (70 per cent. of the aggregate of white cells) are scavengers merely because they convert food-products, disease-germs, broken-down cells, etc., into tissue-cells. Now, when the vital process is below par, the body is vulnerable to disease: the scavenger cells are themselves unable to digest bacteria, and it is not the nutrient, tissue-forming granulations which they carry to all parts of the body, but living disease-germs. In the light of Sajous's discoveries, when a patient is treated judiciously this cannot happen, since, as previously stated, several of our well-tested remedies are able to raise the vital process to its fullest power; as the scavenger leucocytes form part of the body as a whole, they likewise acquire their full power when proper remedies are administered and are thus able

to kill all bacteria they might ingest, convert them into tissue-granulations, and arrest disease.

Comparison with the prevailing doctrines shows a marked contrast. Pneumonia, for instance, is regarded by Osler as a "self-limited disease," which means that medicinal treatment is useless. In the light of Sajous's findings this is tantamount to a death-certificate, since the pneumonia germs are thus allowed to multiply freely and kill the patient. He submits ample evidence attesting to the fact that pneumonia, as well as all other scourges of humanity, *can be checked by remedies which enhance the body's auto-protective functions.*

The germ-destroying leucocytes do not represent the only recourse available by the body when it is exposed to disease. These cells constitute only the first line of defence, as it were. The blood-plasma itself, as shown by many investigators, is also a powerful bactericidal and antitoxic agent. But what is the origin of the substances which endow the fluid portion of the blood with these defensive properties? This constitutes another of Sajous's discoveries.

Auto-antitoxin.—As everyone knows, the mortality of diphtheria has been decreased to a remarkable extent since antitoxin has been used in its treatment. But the source of antitoxin in the body of the animal from whose blood it is obtained, as well as its chemical composition, has remained obscure. Sajous solved both of these problems. He showed that antitoxin contained (1) the oxygenized adrenal secretion (adrenoxidase) previously referred to, which, as the oxidizing (albuminous) constituent of the blood, is constantly present therein; (2) a ferment derived from the pancreas, trypsin; (3) a body rich in phosphorus, nucleo-proteid, derived from certain leucocytes; and (4) the thyroid secretion, which he termed thyroidase (opsonin). The adrenals, pancreas, leucocytes, and thyroid thus proved to be the source of diphtheria antitoxin—and, in fact, of all other antitoxins.

This suggested a line of research which brought out a discovery of even greater practical importance: If by inoculating an animal, the organs referred to could be caused to produce antitoxin by increasing the functional activity of these organs, could we not by means of our remedies also stimulate these organs, flood the blood with auto-antitoxin, and thus check a disease? A prolonged study of all the phases of the question enabled Sajous to answer this question affirmatively and to formulate the general principle that "immunizing medication is the foundation of rational therapeutics;" in other words, that we should regard as the fundamental purpose of our efforts to cure disease, the use of remedies which, by increasing the functional activity of the

organs that produce antitoxin, enhance correspondingly the bactericidal and antitoxic efficiency of the blood. This, he showed also, was the effect produced by those germs, toxins, poisons, etc., which are capable of evoking a defensive reaction in the body, as manifested by fever.

Sajous describes in detail all the diseases that are most fatal to mankind and shows conclusively that wherever cure had been effected by remedies, it was through agents which, by stimulating the organs referred to, increased the blood's asset in *auto-antitoxin*—the name given by him to the antitoxin which our body produces to antagonize disease.

But how does auto-antitoxin destroy pathogenic organisms, the toxins they secrete, poisons, toxic products of metabolism, etc.? Sajous shows that this differs in no way from the process of digestion, and that if auto-antitoxin is present in excess in the blood, the red corpuscles themselves may be digested (hemolysis). As to the process itself, the explanation he submits is based on the well-known fact that ferments are active, up to a certain limit, in proportion with the temperature to which they are exposed. When the temperature is normal, the ferments are active just sufficiently to carry on normal functions; when it is raised, their digestive activity is increased accordingly. Now, in the blood, the temperature is raised whenever its supply of adrenoxidase (the oxygenized adrenal secretion) and the nucleo-proteid granulations (supplied by leucocytes) is increased, owing to a reaction between the oxygen of the former and the phosphorus of the latter. Heat-energy being liberated in excess, the digestive activity of the ferments in the blood (which gives it its bacteriolytic and antitoxic properties) is correspondingly increased.

Yet, how are these germ-killing and poison-destroying substances caused to appear in the blood? How do poisons awaken the defensive reaction of the body?

The Pituitary Body.—Located on the very top of the spinal column in the sella turcica, immediately below the brain, protected on all sides with the utmost care, lies this organ. To its rôle in the economy a recently published text-book of physiology devotes seven lines! Indeed, beyond the fact that it is supposed to provide some sort of a secretion (the purpose of which has never been found), nothing is known as to the actual rôle of its anterior lobe; while its posterior lobe has been relegated to the rank of a vestigial remnant. Sajous demonstrates not only that this conception is false, but that the pituitary body in its relations to the functions of the body at large is even more important than the brain itself. None of these functions are impaired when the cerebral hemispheres of an animal are removed; all cease, however, when the whole pituitary body is submitted to the same

ablation. The brain, as the organ of mind, can utilize the spinal system, with which it is connected, to execute its mandates; but the spinal system is also supplied with its own brain, the pituitary body, which Sajous terms the "*somatic brain*," viz., the governing organ of all vegetative functions. He shows, moreover, that this "*somatic brain*" contains *a delicate organ whose mission is to protect the body against disease*.

In his first volume, Sajous had advanced the view that the anterior pituitary body was a sensitive organ which perceived, as it were, the presence of any adventitious substance in the blood. The existence of such a structure has since been confirmed independently in Europe, Gentès having found histologically therein a sensory structure resembling the olfactory area of the nasal cavity. Dr. Sajous's conception is readily explained: When the blood circulating in the anterior pituitary body contains any abnormal substance—a drug, a poison, a toxin, etc.—it affects this sensitive organ just as odoriferous particles do the olfactory area. Sajous studied this organ in the animal scale, through comparative morphology, and found it in all animals down to such low forms as molluscs, where it bears a suggestive name given to it by zoologists, viz., the *test-organ*, or *osphradium*, and is known by them to test the water ingested by these lowly beings.

But how, in the higher vertebrates, including man, does this test-organ protect against disease?

Sajous found, as previously stated, that the adrenals were provided with a center situated at the base of the brain. This, he subsequently ascertained, was a nucleus of cells in the posterior lobe of the pituitary body, which nucleus received nerve-fibres from the sensitive test-organ referred to. Now, the manner in which any poison or toxin can increase general oxygenation becomes apparent: it excites the test-organ, and this structure, in turn, through nerve-paths (passing by way of the base of the brain, the bulb, the cord, the sympathetic and splanchnic nerves) increases the functional activity of the adrenals. Thus the blood is provided with an excess of *adrenoxides*. True, this is but one of the constituents of the body's protective substance, auto-antitoxin, but the manner in which the other components of the latter are formed is readily apprehended: the metabolism of all organs being rendered unusually active by the excess of adrenoxidase in the circulating blood, the formation of leucocytes is activated (leucocytosis) and the proportion of *nucleo-proteid*, their product, in the blood is correspondingly increased. The secretory activity of the pancreas being also stimulated by the excess of adrenoxidase, more *trypsin* is produced; and we thus have the three components of auto-antitoxin: the oxygen-laden adrenoxidase and the phosphorus-laden nucleo-proteid to supply the in-

creased heat-energy required to enable the trypsin both in the phagocytes and in the blood to destroy bacteria, their toxins, or any other poisonous agent which the blood may contain.

This is not all, however; as shown by Sir A. E. Wright, the bacteria must be prepared for the phagocytic feast. Sajous, as previously stated, has discovered that the thyroid and parathyroids were the source of Wright's "opsonins," *i.e.*, thyroidase. Now, the nucleus through which the adrenals receive their stimulating impulses from the test-organ is also shown by Sajous to transmit stimulating impulses to the thyroid apparatus. When disease-germs invade the blood, therefore, their toxins, by exciting the test-organ, cause the blood to be provided with *thyroidase* (opsonin) to sensitize the germs, and with *auto-antitoxin* to destroy them.

The grave mortality from all diseases in the young as well as in the old shows, unfortunately, that although our body is endowed with protective functions, these are often inadequate to prevent, or even arrest, disease. This is where Sajous's labors are to prove most prolific in results, since they have demonstrated conclusively that *by means of the remedies in constant use among physicians*, the protective mechanism can be activated sufficiently to protect the patient. Pasteur's prophylactic treatment against rabies, Wright's inoculations, bacterial vaccines, etc., are but examples of the protection afforded through agents which stimulate the test-organ, this action differing in no way from that of the drugs referred to, the action of which can, besides, be more readily controlled. All these measures cause the blood to be flooded with thyroidase (opsonin) and auto-antitoxin. Hence the fundamental principle Sajous establishes—that "*immunizing medication is the foundation of rational therapeutics*," which, as he shows by a comprehensive study of cancer, tuberculosis, syphilis, Asiatic cholera, cholera infantum, bubonic plague, epilepsy, puerperal eclampsia, and many other foes of mankind, is as applicable to the most virulent diseases as to the more benign. He not only points out the meaning of the *vis medicatrix naturee*, but shows us how we can increase its efficiency and thus master disease.

Those who, like the writer, have availed themselves of Sajous's teachings in their daily work, have been able daily to appreciate the strength of his position, the power of the weapon or key he has placed in their hands, and the renewed confidence he thus inspires in practical medicine.—*Monthly Cyclopedia of Practical Medicine*.

TREATMENT OF UTERINE FIBROMYOMATA WITH THIOSINAMINE INJECTIONS.

BY DR. SIDNEY H. GARDINER.

THE satisfactory results obtained by Dr. Sidney H. Gardiner from the treatment of uterine fibromyomata with intramuscular injections of Fibrolysin into the gluteal region were such as to encourage him to believe that the use of this remedy would do much to save such cases from radical operation. One of the important effects also noticed during the course of this form of treatment was that even before the tumor had completely disappeared the patient's general health greatly improved, not only physically but also mentally.

A *résumé* of the cases successfully treated by the author on the above lines will best illustrate the results.

CASE 1.—A woman of 38, married; one child. Suffering from acute menstruation occurring every three weeks for the past three or four years, accompanied by leucorrhoeal discharges of mucoid character. The examination revealed the presence of a nodulated mass on the left side of the cervix, softer posteriorly and extending into the cul-de-sac. It was evidently a case of prolapsed and cystic left ovary, with either an inflammatory mass of fibroid growth on the side of the cervix immediately in front of, and adherent to the ovary. Local treatment had no influence upon the tumor, and the treatment for fibromyomata with ergot, etc., also showed no noticeable results. After eleven months the first injection of Thiosinamine was made. Upon the fourth injection the tumor was found to be much reduced in size, almost painless when touched, and the patient also bore the examination with less distress. (For the subsequent injections, the author made use of Merck's Fibrolysin, a Thiosinamine preparation put up ready for immediate use.)

After the fourteenth injection no trace of the tumor could be found. Bimannual examination deep into the pelvis behind the uterus, and rectal examination showed nothing left but the ovary, still in the cul-de-sac, but not so painful. With the disappearance of that tumor came a marked improvement in the general condition, and after a period of nine months had elapsed there had been no return of the tumor and the patient had maintained her health.

CASE 2.—This patient was suffering from vomiting during pregnancy, and was unable to retain any food. When Dr. Gardiner was called in he found a basin containing a pint and a half of mucous saliva beside her. An examination revealed the presence of a tumor

on the right lower uterine segment and a larger one higher up. Four years before, this tumor had been mistaken for pregnancy by her attending physician. Fibrolysin injections were made every two or three days until the end of the second week of treatment, when the patient had recovered sufficiently to come to the author's surgery for treatment. Twenty-one injections of Fibrolysin were given in all, and in due time she was delivered of a healthy baby.

In this case it was interesting to observe the effect of the medicine in allaying the irritation in the uterus that had caused the reflex symptoms, viz., vomiting and salivation.

CASE 3.—This was one of fibromyomata imbedded into the right side of the uterus, and being subperitoneal there were no haemorrhages. The patient had been under the author's observation for nearly eighteen months and his diagnosis had been confirmed by three other physicians, including a gynecologist of ripe experience.

With the exception of the disappearance of a pain in the right iliac and hypogastric region, there was little effect noticeable at first from the treatment with Fibrolysin. However, after the fifty-fifth injection the tumor had almost completely disappeared, and a recent examination showed no return.

The patient at the close of the treatment had improved immensely, and felt better than for years past.

CASE 4.—This patient was delivered nine years previously of her last child, and had since had an abortion without any apparent cause. During the past few years she developed palpitating disturbances of the heart, with an impaired digestion and, in her own words, a "general good-for-nothingness." Her mental state became clouded, she failed to think and act in an orderly manner. Upon examination a uterine tumor was found reaching up to the umbilicus, and measuring from side to side over $6\frac{1}{2}$ inches, either involving the whole uterus or surmounting the fundus and spreading laterally. Six to eight Fibrolysin injections were administered monthly, and at the time of writing the patient had been given forty-eight in all.

Although still under treatment, the following improvements had taken place: Menstruation, which was formerly profuse and lasted from seven to eight days, is now regular, lasting three to four days and never profuse. The tumor was reduced in size laterally from $6\frac{1}{2}$ to 4 or $4\frac{1}{2}$ inches, while its length from cervix to fundus was also proportionately reduced, the uterus being freely movable. The waist line had decreased by four inches, and the bust measurement had slightly increased.

Her general health she considered fully restored, she worked better, tired less easily, and her mental fears and emotions had disappeared.

The other four cases in hand were at the time of writing not

far enough advanced to entitle the author to report upon them, but in his own words: "While the paucity in numbers might prevent conclusions, the richness in results would warrant consideration."—*Merck's Archives*.

ABSTRACTS.

Fibrolysin in Veterinary Medicine.—Train almost completely cured a sclerosis in a horse, secondary to multiple abscesses, with two subcutaneous injections of 11.5 Cc. of fibrolysin. The owner had intended to kill the animal, but two weeks later was able to sell it for the original price. A fibroid tumor, secondary to trauma, in an ox, disappeared after two injections of 11.5 Cc. Excellent results were also seen in other conditions likely to cause scar formation, so that fibrolysin must be looked upon as a valuable veterinary drug.—*Berl. Tierarztl. Woch.*, 1908, No. 14.

Treatment of Bronchopneumonic Catarrh.—A. Ferrata and A. Golonelli, of the Medical Clinic of the University, Parma, report upon the results of styracol therapy in bronchopneumonic affections, which were observed in the clinic of the University of Parma during three years. It can be stated with certainty that styracol, which is a guaiacol preparation, shows a decided influence upon the mucous membranes of the bronchi. After the use of styracol the night-sweats will be less annoying and the fever will drop. An influence upon the bronchi is also manifest in that the expectoration will lessen in amount and will become thinner. Many patients experience considerable relief from cough, and the general condition will improve remarkably. Styracol was also used with good results in various intestinal affections. The authors recommended styracol particularly, owing to its effect upon the severity of the bronchial catarrh and its antipyretic action.—*Gazz. Internaz. di Medicina*, 1908, No. 14.

A Clinical Investigation of an Epidemic of Grippe, followed by a Large Number of Cases of Pneumonia; with Special Reference to the Infectious Nature and Period of Incubation of these Two Diseases.—Albert Woldert has had the opportunity of carefully studying cases of croupous pneumonia and grippe in a small rural district. From his observations he has drawn various conclusions, among which are the following: While grippe appears to be an infectious disease, not all of those who come in direct contact (such as sleeping in the same bed) contract the disease. The possible average period of incubation by air transmission is about seven days. One suffering with grippe should be warned against the tendency to develop

pneumonia. Proper care should be exercised to destroy all sputa and fomites which may aid in the spread of grippe. Infection of the human system by the bacillus of grippe so lessens the natural immunity, or prepares the soil of man, that subsequent infection by the virulent diplococcus of pneumonia and consequent production of croupous pneumonia may more readily occur. The possible average period of incubation of croupous pneumonia by air transmission is about ten days.—*Medical Record*, January 5, 1907.

The Intestinal Bacteria ; How They Acquire Toxicity, and How to Determine This Experimentally for Clinical Purposes

—E. Palier declares that we have to deal with only two micro-organisms, which are constantly found in the feces and which may become pathogenic. These are the coli bacilli and the cocci. From his experiments he concludes that a fresh medium enhances the virulence of the coli bacilli, and that in agar older cultures are on the whole more virulent than fresh ones. It appears that under a meat diet the coli bacilli of the intestines are most likely to become virulent. This is most likely to occur when some of the meat happens to pass in an undigested state through the stomach and duodenum. As to the cocci, the writer has found them usually in the form of diplococci or in short chains. It is generally admitted that the coli bacilli are in most cases responsible for appendicitis, yet in some cases cocci alone are found in this affection. The presence in the feces of virulent cocci denotes a localized point of suppuration somewhere in connection with the intestinal canal. It is the virulence of bacteria that is of importance.—*Medical Record*, January 5, 1907.

Throat Diseases Caused by the Misuse of the Voice.—N. J. Boeck van Baggen points out the symptoms common to clergymen's sore throat. Patients suffering from this disorder do not use their breathing, articulation or vocal muscles normally. Harmonious co-operation among these three sets of muscles is lacking. Breathing is usually clavicular in these cases. The breath is the chief element in the production of voice and speech; thus the patient should learn in the first place the correct way to breathe, and the best method of using the breath in phonation. The combined diaphragmatic and thoracic breathing is recognized as the best way of breathing. No speaker who misuses his voice should take singing lessons to improve his speaking. The patient, before undertaking any exercises, must first go through a judicious medical treatment united with rest of the vocal organs.—*Medical Record*, January 5, 1907.

Proceedings of Societies.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

IN 1905 a few members of the National Association for Study and Prevention of Tuberculosis attended the Paris meeting of the International Congress on Tuberculosis, bearing an invitation for the Congress to come to Washington in 1908. Through President Roosevelt, the invitation was extended also on behalf of the nation. During the three years which have elapsed since the last meeting, the United States Committee have been at work to make the first Congress to assemble in America a great success. The result of their efforts was apparent to all who were privileged to attend the Washington meeting, for the registration was more than double that of any previous Congress.

Over 300 papers were presented, and for their reception and discussion the Congress was divided into seven sections.

Section 1.—Pathology and Bacteriology.

Section 2.—Clinical Study and Therapy of Tuberculosis, Sanatoria, Hospitals and Dispensaries.

Section 3.—Surgery and Orthopedics.

Section 4.—Tuberculosis in Children—Etiology, Prevention and Treatment.

Section 5.—Hygienic, Social, Industrial and Economic Aspects of Tuberculosis.

Section 6.—State and Municipal Control of Tuberculosis.

Section 7.—Tuberculosis in Animals and its Relation to Man.

The whole of the week of September 28 was taken up with the work of the Congress, the sections meeting daily, with a general session Monday and Saturday. On Monday Mr. Cortelyou presided, and an official welcome was given to the foreign delegates, one from each country represented presenting his credentials and replying to the address of welcome. On Saturday President Roosevelt appeared before the Congress, and after the storm of applause had subsided made a very happy address.

The closing feature of the Congress was the delivery by the foreign delegates of their messages of farewell, all of which breathed the spirit of gratitude for the pleasure of their stay in America. The felicitations were delivered as follows: For Argentina, Dr. Fermin Roderiguez; Austria, Dr. Hermann von Schrotter; Belgium, Dr. Denys; Canada, Dr. Frederick Montizambert; China, Dr.

Jee; Costa Rica, Dr. Juan J. Ulloa; Cuba, Dr. Diego Tamayo; Denmark, Dr. Bang; Egypt, Dr. J. B. Piot Bey; England, Dr. Thos. J. Stafford; France, Prof. Landouzy; Germany, Dr. Von Leube; Guatemala, Mr. R. Bengoechea; Japan, Dr. G. Suto; Hungary, Dr. Detre; Italy, Dr. Stella; Mexico, Dr. E. Liceage; Holland, Dr. N. Th. Tendeloo; Norway, Dr. F. C. Harbitz; Panama, Dr. Martin J. Echeverria; Roumania, Dr. S. Trimescu; Russia, Dr. A. A. Wladimiroff; Siam, Paul G. Wooley; Spain, Dr. Camile Calleja; Sweden, the Hon. Conrad Cedercrantz; Switzerland, Dr. O. Amrein; Uruguay, Dr. Luis Melian Lafinur.

The social entertainments gave the visitors the opportunity of seeing a number of beautiful homes in Washington and of meeting many delightful people. Lions in the world of science, who fought their conflicts of theory and conclusion in the sections, were led with lamb-like submission to tea tables and garden parties later in the day, while dinner parties were universally the order of the evening.

On Monday evening the delegates were invited to a private view of the Corcoran Gallery of Art.

On Wednesday Mrs. Gardiner Hubbard's home was opened to the foreign delegates. One will not soon forget the vine-hung mansion, with its broad piazzas, the sloping lawn with its fringe of woods, and the happy company there assembled, with Dr. Alexander Graham Bell assisting in the hospitalities of the afternoon.

The evening reception at the residence of Dr. and Mrs. Charles W. Richardson was a brilliant affair. The hosts were assisted by Mrs. William H. Taft, and there were present a number of the officials of the Department of State and all the ambassadors and ministers then in Washington.

On Thursday a banquet was tendered to 300 foreign delegates by the Department of State, at which Secretary Root presided. In beauty of appointments this dinner has rarely been exceeded in Washington.

On Friday afternoon 4,000 availed themselves of the opportunity to greet the President and Mrs. Roosevelt in the blue room at the White House. At night a smoker was tendered by the local committee in the ball room at the New Willard.

Each evening lectures were delivered to large audiences in the new National Museum by distinguished foreigners.

The scientific session of greatest interest was perhaps that of Wednesday afternoon—a joint session of Sections 1 and 7 on the relation of human and bovine tuberculosis. The speakers were: Koch, Theobald Smith, Sims Woodhead, Arloing, Fibiger, Ravenel, Raw and others.

Prof. Koch insists that the human and bovine bacilli are distinct types, with different cultural characteristics and of different virul-

ence; that pulmonary tuberculosis in man is never due to bovine infection; that infection in man from bovine bacilli *may* occur (*e.g.*, glandular, intestinal tuberculosis), yet serious disease from this cause occurs very rarely; that fatal tuberculosis in man being in almost every instance a human infection, measures against the spread of the disease must be directed primarily against the propagation of human bacilli. These were his conclusions communicated to the London Congress six years ago, and the work done by a host of investigators since has not caused him to alter his opinion. He will not accept the conclusions of the British Royal Commission, questioning the conditions of their experiments. He summarized briefly as follows:

"All competent investigators agree that the tubercle bacilli of human origin differ from the tubercle bacilli of cattle, and that consequently we must differentiate between a *typus humanus* and a *typus bovinus*. The British Commission also admits the existence of differences, but as some of their cultures showed definite changes in their characteristics after passage through animals and various cultivations, they have differentiated a third group, which they call 'unstable.'

"As I have repeatedly emphasized, it is not of the slightest importance to us whether, after animal inoculation or breeding experiments, the tubercle bacillus is stable or unstable. What concerns us is behavior in the fresh condition. I am, therefore, unable to accept this third group of the British Commission, and I am satisfied with their admission that the fresh tubercle bacilli of the human type differ distinctly from those of the bovine type.

"The tubercle bacilli of the human type are characterized by the fact that they grow rapidly and abundantly in a thick layer on glycerin serum. They are virulent to guinea pigs, slightly virulent to rabbits, and almost non-virulent to cattle. The tubercle bacilli of the bovine type grow very slowly and in a thin layer on glycerin serum; they are of equally high virulence to guinea pigs, rabbits and cattle. To my knowledge, the bacilli of the human type have never been demonstrated in cattle.

"The bacilli of the bovine type, on the other hand, can occur in man. They have been found in the cervical lymph glands and in the intestinal tract. With few exceptions, however, these bacilli are but slightly virulent for man, and remain localized. The few known cases in which the bovine tuberculosis is said to have produced a general and fatally progressive tuberculosis in man appear to me not to be above suspicion.

"In closing, I have still one point to discuss which seems to me of high importance. Of all human beings who succumb to tuberculosis, eleven-twelfths die of consumption, or pulmonary tuberculosis, and only one-twelfth of other forms of the disease. One

would have expected, therefore, that those investigators who are interested in establishing the relations between human and bovine tuberculosis would have searched for bacilli of the bovine type preferably in cases of pulmonary tuberculosis.

"This, however, has not been the case. Evidently animated by the desire to bring together as many cases as possible of bovine tuberculosis in man, they have investigated particularly cases of gland and intestinal tuberculosis, and have neglected the much more important pulmonary tuberculosis. In spite of the bias under which the researches hitherto have suffered, there yet remains at our disposal a sufficient number of investigations of pulmonary tuberculosis to warrant a provisional expression of opinion.

"The gist of it is is—and I beg you to take note of it—that *up to date in no case of pulmonary tuberculosis has the tubercle bacillus of the bovine type been definitely demonstrated.* If on further investigation it should be established that pulmonary tuberculosis is produced by the tubercle bacillus of the human type exclusively, then the question will be decided in favor of the view which I have upheld, and we must direct our regulations for combating tuberculosis by all means primarily against the tubercle bacilli of the human type.

"On account of the great importance of this question, I intend to undertake, as soon as feasible, experiments along this line on a broad scale. At the same time I wish to make my plea to other tuberculosis workers that as many cases as possible may be examined to join with me vigorously in this task. But I wish to lay stress on the fact that the conditions laid down by me for the carrying out of these investigations must be followed. I consider it quite possible that in this manner the essential facts for deciding this important question may be collected in about two years and be presented to the next International Congress."

While Dr. Koch's views were greeted with profound respect, it was apparent before the next speaker, Prof. Theobald Smith, of Harvard University, had finished that the great German scientist stood almost alone in his position. Prof. Smith, avoiding scientific and academic discussion, declared it had been demonstrated that half of certain kinds of tuberculosis in children, such as those of the glands of the neck and the abdomen, are due to infection from milk.

In the case of adults, Prof. Smith agreed with Dr. Koch that any regular or wholesale conversion of bovine into human bacilli in the human body is contradicted by most of the evidence presented.

Prof. Arloing, who followed, took sharp issue with Dr. Koch, declaring that, from the standpoint of hygiene, his experiments emphasized the unity and fusion of the classic types, and demon-

strated the necessity of taking precautions against tuberculosis, whatever may be its origin, human or bovine.

Dr. Johannes Fibiger, Professor of Pathology and Anatomy, University of Copenhagen, Denmark, in presenting a paper, the joint work of himself and Dr. C. O. Jensen, Professor of Pathology, Royal Veterinary Hospital, Copenhagen, voiced the most pronounced views heard in opposition to Dr. Koch.

"It is common knowledge that the first important communications on the differences between bovine and human tubercle bacilli are due to American investigators, and in the front rank, to Theobald Smith," said Dr. Fibiger.

"As early as 1896 and 1898 Theobald Smith called attention to differences in morphology, biology and pathogenic power existing between tubercle bacilli isolated from man and from cattle. These remarkable investigations only attracted merited attention after the Congress in London, 1901, where Koch mainly based his opinions, that man very rarely is infected from cattle, on experiments really agreeing with those of American investigators, Dinwiddie, Frothingham, and especially Theobald Smith.

"Now, however, the wrong of Koch's opinion being generally recognized, one does not forget that the transmissibility of bovine tuberculosis to man is pointed out by extensive investigations from the last years, establishing the fact that tubercle bacilli from cattle often possess a high degree of virulence upon cattle, the pathogenic power of bacilli from man frequently being much smaller."

Dr. M. P. Ravenel, of Madison, Wis., presented the question from the American point of view. He also opposed the ideas presented by Dr. Koch.

"On the correct solution of this question depends, no doubt," said Dr. Ravenel, "the health of many children, and even their lives, and I would consider it an extreme misfortune not only for this country, but for every country on the face of the earth, if any impression should go from this meeting that even the small proportion of deaths due to the bovine bacillus was a negligible quantity.

"I have inoculated repeatedly," added Dr. Ravenel, "the bacilli of the bovine type, absolutely characteristic in every respect to the human, and if not recovered in culture, if examined in the tissue you will find them beaded and stained exactly like the human bacilli. I have also demonstrated that cows cough up sputum and distribute it exactly as human beings do, and in the sputum of such cows I have demonstrated the tubercle bacilli exactly corresponding to the human type.

"One other thing has been proved through the work all over the world, namely, that the tubercle bacilli can pass through the intestinal wall and move through the mucous membrane of different parts of the body very rapidly without leaving any mark of its

passage. Demonstrations have shown that inside of four hours, in fact, inside of three and a half hours, tubercle bacilli have passed from the milk of animals through the thoracic duct and have reached the lungs in sufficient quantities to kill other animals inoculated.

"Having demonstrated that there are a certain number of cases due to bovine tubercular bacillus; that a certain number of deaths occur from this bacillus, and having demonstrated that the tubercular bacillus passes into the stomach or gets there from some outside source, it behooves us from every point of view to take every precaution possible against contamination of our milk. I do not think it is possible with our present knowledge, and it will be many years before we have sufficient knowledge to determine the number of cases due to bovine bacillus as compared to those due to the human bacillus. There can be no doubt, I think, that at the present time the human phthisis is the phthisis that we must look at for the most victims. *I cannot agree that the proportion of cases due to bovine bacillus is insignificant.* It is an extremely important factor. I may call attention to the fact that to stamp out this disease both sides must be looked after. It is important to guard against tuberculosis in cattle, not only from the public health standpoint, but because it is a most serious economic question in every civilized country in the world, with one or two exceptions."

In opposition also to Dr. Koch was Dr. Nathan Raw, of Liverpool, who presented the views of the English delegates to the Congress. He contested vigorously the view that tuberculosis from cattle could not be conveyed to human beings.

"As a result of observations in hospitals of more than 5,000 cases," said Dr. Raw, "I am convinced that there are two distinct forms of the disease occurring in the human body. The first, or largest group, commonly called consumption, is caused by infection from person to person. The second group occurs chiefly in children, and is conveyed by tuberculous milk. I am convinced that when tuberculous cattle are eradicated this later type of disease will entirely disappear, but I am also convinced that consumption will only be stamped out by education, improved sanitation and scientific treatment."

At a private session held at the New Willard an endeavor was made to reach certain conclusions which would meet the views of all investigators, but this end was not accomplished. The view most generally held was that expressed in the final resolutions of the Congress, which appear at the end of this report.

Many papers were read on the tuberculin in diagnosis and treatment. Von Pirquet's paper, recording post-mortem examinations upon 200 children, substantiated his claim that a positive

cutaneous reaction in children was evidence of the presence of tuberculosis.

Baldwin's conclusions regarding the conjunctival tuberculin test were in part: (1) A single instillation of a weak solution has some value in confirming the presence of tuberculosis in its early stages. (2) It has little value when the symptoms of tuberculosis lead only to a suspicion. (3) It is unreliable for diagnosis. (4) It should be restricted to adults, as the cutaneous test has been found equally valuable for children, and is harmless.

The therapeutic use of tuberculin received the general approbation of those in attendance in Sections 1 and 2. It is yet impossible to decide which of the various tuberculins gives the best results in practice. Many modifications are in use, with insufficient evidence to judge their comparative merits. Tuberculin therapy has its limitations—it is not a specific for tuberculosis, yet results seem to show that many of the more chronic types of pulmonary infections, surgical tuberculosis (glandular, bone and joint affections), and especially genito-urinary tuberculosis, show marked improvement under its use. It must be used with extreme caution, as much harm may result in careless hands, and the man who does not recognize its potency should not attempt to use it. It is not necessary to observe the opsonic index when administering tuberculin: its technique makes it impossible in general practice, while the instructions of Trudeau, Denys and others for the dosage of tuberculin make its exhibition comparatively simple to the observing practitioner.

The value of out-of-door living in the treatment of surgical cases was emphasized, and a number of papers dwelt upon the provision of special wards and balconies in hospitals where these cases are treated.

In Sections 5 and 6 many valuable contributions were made. It was recognized that the introduction of notification of all cases, with the resultant supervision, will go far to lessen future infections and mortality from the disease. Municipal and governmental control of the disease, the value of playgrounds, elementary instruction in schools, training of teachers, visiting nurses, popular lectures, housing, building associations, farm colonies, racial susceptibility, prostitution, dispensaries, industrial conditions, Federal Bureau of Health, railway sanitation, factory inspection, statistics, the army, were a few of the many subjects discussed in these sections.

In Section 7, Dr. J. G. Rutherford, Veterinary Director-General for Canada, presented an interesting paper on the control of bovine tuberculosis in Canada. The department will supply tuberculin free of charge to the veterinary officer of any municipality to test the herds supplying milk to such municipality. The cities of Moncton, N.B.; Quebec, Que.; Portage la Prairie, Man., have al-

ready instituted this inspection—all herds supplying milk are subject to inspection, the Provincial Health Act in these Provinces giving municipalities this power.

The department for three years has been in possession of a tuberculous herd, which are kept on a farm specially procured for the purpose, near Ottawa. They are kept out-of-doors constantly, summer and winter, having access to open sheds in the winter, but are fed in the open. Healthy cattle have been added from time to time, with no infections occurring. None of the calves have developed tuberculosis, with the exception of two, which were probably congenital infections. This is a practical demonstration of the value of out-of-door living in treatment of tuberculosis, and when the report is published there will be many valuable suggestions arising of interest to our agriculturists. There is no doubt that much of the tuberculosis in cattle is due to unnatural housing conditions, as well as to increased susceptibility from inbreeding.

The report of the Congress will be published in four or more large volumes, and will be a mine of practical information to those dealing with tuberculosis.

Much enthusiasm was aroused in those attending the Congress, and practical results will surely follow. The Texas delegation came on a special train, and en route formed a State Association.

The society editor of the *Washington Post* soliloquizes thus: "What effect will the Congress have upon Washington and other social centres? Shall we have a series of piazza parties instead of the 5 o'clock teas to which we have become accustomed through December and January? Will debutantes of future seasons be more engrossed in the becomingness of furs than of chiffons? Will the benighted beings who still cling to cream in their tea insist upon having it pasteurized? The open-air propaganda is well started at Washington. The practice of sleeping out-of-doors, which has for some time been practised here and there, will now, doubtless, become more general. One handsome residence in the north-west section of the city, because of its tier of balconies in the rear, was frequently mistaken for a housekeeping apartment building until it became known that the balconies were outdoor bedrooms, the entire family being converts to the practice of sleeping in the open air. Whenever you see a man or woman with particularly bright eyes you may suspect them of belonging in this class."

The Canadian Committee on the Congress made a report on anti-tuberculosis work in Canada, and it is to be hoped that the reports made to the Federal and Provincial Governments by their official delegates will result in more active measures being adopted in Canada. A start has been made, but it is only a start. Thirteen thousand five hundred are dying of tuberculosis in Canada each year. We need rousing. The resolutions of the Congress will be

forwarded through the Canadian Association for Prevention of Tuberculosis to the Provincial Governments, to the municipalities, and to interested associations throughout the Dominion.

The resolutions are appended:

Resolved, That the attention of the States and central governments be called to the importance of proper laws for the obligatory notification by medical attendants, to proper health authorities, of all cases of tuberculosis coming to their notice, and for the registration of such cases, in order to enable the authorities to put in operation measures for prevention.

That the utmost efforts should be continued in the struggle against tuberculosis to prevent the conveyance from man to man, as the most important source of the disease.

That preventive measures be continued against bovine tuberculosis, and that the possibility of the propagation of this to man be recognized.

That we urge upon the public and upon all governments the establishment (1) of hospitals for the treatment of advanced cases of tuberculosis; (2) the establishment of sanatoria for curable cases of tuberculosis; (3) the establishment of dispensaries and night and day camps for ambulant cases of tuberculosis, which cannot enter hospitals and sanatoria.

That this Congress endorse such well-considered legislation for the regulation of factories and workshops, the abolition of premature and injurious labor of women and children, and the securing of sanitary dwellings, as will increase the resisting power of the community to tuberculosis and other diseases.

That instruction in personal and school hygiene should be given by properly qualified medical instructors.

That colleges and universities should be urged to establish courses in hygiene and sanitation, and also to include these subjects among their entrance requirements, in order to stimulate useful elementary instruction in the lower schools.

That the Congress endorses and recommends the establishment of playgrounds as an important means of preventing tuberculosis, through their influence upon health and resistance to disease.

611 Spadina Avenue, Toronto.

J. H. E.

THE AMERICAN HOSPITAL ASSOCIATION MEETING

THE tenth annual conference of the American Hospital Association was held in the King Edward Hotel, Toronto, September 29th and 30th and October 1st and 2nd. There was an attendance of about 200 delegates, most of whom were hospital superintendents.

Acting Mayor Harrison welcomed the convention to the city. He said in part:

"The name 'Toronto' is an Indian one, and signifies 'place of meeting.' Legend tells us that it was in the cool shadow of the stately trees which in the distant past adorned the banks of our beautiful bay that various tribes of redmen held friendly intercourse; and that it was here also the hardy pale-face, who sought adventure or gain on the great Indian trails, bivouacked with the Hurons. You will, therefore, see that Toronto's claim to the title 'Convention City' is not without justification.

"It is, however, seldom that it falls to the lot of an individual—no matter how exalted his position—to address a more important assemblage than that which I find present here this morning. It is to your charge that the well-being of thousands of suffering humanity is unreservedly entrusted.

"This, I understand, is the first occasion in the history of your Association that Canada has been honored with your presence. I trust that it shall not be the last, for I learn with no little pride that, though the American Hospital Association comprises some 470 superintendents and hospital trustees, 50 of these are Canadian.

VISIT THE HOSPITALS.

"You will, within the next few days, be afforded ample opportunity of visiting the various hospitals, including the Toronto General, Grace, the Western, the Hospital for Incurables, the Orthopedic, the Hospital for Consumptives at Weston, also the Lakeside Home for Little Children, the Hospital for Sick Children, and the Nurses' Home, the three last-named institutions constituting the life-work of one of our leading citizens, whose earnestness and enthusiasm know no bounds, and whose munificence knows no limit other than his means. The gentleman to whom I allude is, I am pleased to observe, an honored officer of this Association, Mr. J. Ross Robertson. (Applause.)

"It may not be amiss to inform you that Ontario boasts of some 67 hospitals, and that probably as many more are contained in the other Provinces of Canada.

"If I may be permitted to throw out a suggestion, it is that every State in the Union should be prevailed upon to form an association; that each of such associations should send delegates to the A. H. A., and that the latter should form an alliance with the Canadian Association. You would then have an international association, in which every State of the Union and every Province of Canada would be represented.

"It may be of interest to you to learn that in Toronto the city contributes to the hospitals seventy cents per diem per public ward patient, and that the Provincial Government is also a contributor to the extent of twenty cents.

"When you again visit us we hope to be able to show you through a general hospital that will be worthy of our city, our Province, and of Canada."

PRESIDENT'S ADDRESS.

Dr. S. S. Goldwater, of Mount Sinai Hospital, New York, President of the Association, in his address showed a deep study of hospitals and the various spheres in which the Association must work and expand. He drew attention to the fact that, although nine years old, the Association had nearly doubled in membership the present year, and he deemed the time opportune for the discussion of organization work to enlarge the life and scope of the Hospital Association.

WHAT ASSOCIATION MEANS.

"What are the factors which will in the long run determine the usefulness of this Association?" asked Dr. Goldwater. "They appear to me to be the number and character of the Association's members; the extent, thoroughness, comprehensiveness and co-ordination of its investigations and studies; the effectiveness of its public activities, including in this latter means for the dissemination of its observation and recommendations for the enlightening of the public on hospital affairs and the use of public opinion to influence and guide philanthropists and legislators."

EFFECTIVE WORK.

He joined hands with those who wished an effective institution rather than a large one, but saw no reason why a large one should not be more influential and perfect than a small one. The Association was the result of that which is inherent in every medical man and nurse—the desire to associate with and seek the friendship and advice of those interested in similar occupations.

BUT FEW DEVOTED MINDS.

"For ten years," continued the President, "this institution has cautiously felt its way, slowly and steadily gathering strength and

purpose. Its contributions to hospital literature have depended upon the activities of a few devoted minds, each working more or less independently of the other. With its larger membership of to-day, with its still larger membership and its inevitably greater resources of the immediate future, its progress need no longer be left to the chance interests of temporary executive officers, or to the contributions of a few active and willing members. The progress of this Association should proceed in the future according to the plan calculated to turn the light of public investigation and discussion upon every condition which, for good or ill, affects, or is capable of affecting, the welfare of the institutions with whose management we have charge. But we cannot hope to bring about the sustained, searching, many-sided criticism of hospital methods which is desired unless our plan is one which will turn to use the great latent powers of our Association.

MANY HARD PROBLEMS.

"The problems involving the hospital management are multitudinous. Many of these reach far beyond the sphere of the average hospital superintendent's daily thought. We must learn how best to apply to our work the principles of medicine, of sanitation, of public and personal hygiene, of hospital and district nursing and nursing education, of social economics, ethics, law and finance, of business and domestic administration, of engineering and architecture. All this lies within our reach through the medium of this Association."

Dr. Goldwater expressed the opinion that all interested in hospital work, including trustees, should be members of the Association. He concluded by suggesting that the organization should be modified so as to take in the different sections under regularly constituted departments.

In her paper on the "Relationship of the Training School to Hospital Efficiency," Miss C. A. Aikens hit out from the shoulder, and made statements sufficiently important to rouse the whole Association to a deeper sense of its responsibilities. She deemed the training school essential to efficiency in nursing. Poor conditions might be overcome by good nurses, but poor nurses could never be perfected by the best of hospital conditions. "The real essence of nursing," said Miss Aikens, "must always be personal service to the sick or helpless." No matter into what field of knowledge a nurse might venture, she would soon become aware that she trespassed upon the field of others, and that the crowning glory of her achievements must be nursing.

TOO MUCH TRAINING.

Miss Aikens showed that the tendency of the times was to plan and insist on a great deal of instruction that in no way benefited

hospitals or nursing. It seems strange to her that the modern nurse must pass through the hands of from twenty to thirty lecturers, dealing with a hundred subjects, before being qualified for humanitarian work. She believed it nonsense to think that the nearer a nurse approached the medical profession in training so much the better would be her standard. There was a vast difference between medicine and the duties of a nurse. Nurses were frequently taken away from care of patients at critical times to listen to lectures that were, from a nurse's standpoint, pure twaddle.

TOO MUCH CLASSROOM.

The essence of the whole problem was: "What are the essentials of a nursing education, theoretical and practical?" "I am firmly of the opinion," she said, "that the efficiency of the nursing service will be increased by having more teaching done at the bedside and less in the classroom." The laws bearing upon training schools, upon which the efficiency of hospitals depend, went a long way to imperil the efficiency of the nursing service. While it was desirable that nurses should be educated, she could never believe that a high school training was a necessary qualification for a nurse, the fitness of whom would never be determined by any gauge of education. A moral, sympathetic, Christian woman with little education might make a ten times better nurse than the graduate of the best college in the world."

So far as the choice of candidates is concerned, the superintendent of every school had the right to exercise her own judgment, and should not be forced into a certain line of choice by statute.

CRAZE FOR LAWS.

Men in this age seem to have a craze for making laws that are more of a reproach than a benefit to society. They exacted unjust conditions, to the detriment of the well-being of many an institution, particularly hospitals and training schools. To make haste slowly in many matters of this character was a splendid motto. The nurse is best fitted for her work who has had some training along the line of household responsibilities. Too often was important work left to pupils instead of being performed by the heads of hospitals. It should be the duty of the American Hospital Association to plan and work out all matters peculiar to hospitals and nurses on a common-sense basis.

Rev. A. S. Kavanagh, D.D., Superintendent of the Methodist Episcopal Hospital, Brooklyn, submitted the report of the sub-committee on the training of nurses, discussing at length the curriculum of studies, and reviewing the history of the movement which culminated in the re-adoption of the two-year course in some of the leading New York hospitals. Dr. Kavanagh did not advocate either the two-year or the three-year course, but moved a resolution

(which was adopted) providing for the appointment of a committee of the Association to study the whole question, information to be secured from all possible sources, so that a decision might be arrived at as to what nurses should and should not be taught, and what length of course should be adopted. This report will be presented at the next annual meeting.

A portion of one morning session was devoted to the consideration and discussion of papers by Dr. Robert J. Wilson, Superintendent of Hospitals of the Health Department of New York; Dr. D. L. Edsa, Professor of Therapeutics in the University of Pennsylvania, and Dr. Joseph B. Howland, of the Massachusetts General Hospital, Boston, on medical organization and medical education and the treatment and control of infectious diseases in the public hospital. Dr. Wilson believed that isolation should always precede diagnosis in the hospital. Pneumonia and throat troubles he had found to be easily communicated to patients in wards by the indiscriminate placing of patients affected with these troubles in beds between patients suffering from other troubles.

MILK AS TYPHOID MEDIUM.

There was a fallacy that typhoid was spread chiefly through contamination by excreta. "I know of no more dangerous medium for the communication and spread of typhoid than milk and utensils."

Milk was declared to provide all the conditions for the rapid development of typhoid bacilli, and a case was cited where an epidemic had ensued from a milk bottle being taken out of a typhoid patient's room and passed on into use without being sterilized. Dr. Wilson commended cleanliness as the best disinfectant, and advocated the segregation and isolation of all contagious and infectious diseases.

IMPORTED INFECTION.

The discussion of the papers brought to the front the question of preventing infection. It was admitted that infection was possible in hospitals, but it was most improbable. Wherever infection had been carried from one ward to the other investigation had always revealed carelessness. Dr. Wilson declared that his investigations had been rigid. Cases of carelessness were few.

Dr. Ross, Buffalo, stated that there was more infection imported into the hospital by visitors than it was sometimes possible to cope with.

Mr. J. Ross Robertson stated that since 1892 infection brought into the Hospital for Sick Children by visitors had cost the hospital about \$20,000.

HOSPITAL CONSTRUCTION.

The construction of hospitals, and the report of the sub-committee on this important subject by Dr. J. N. E. Brown, Superin-

tendent of the Toronto General Hospital, were subjects that caused considerable discussion.

Mr. Meyer J. Sturm, architect, of Chicago, in his address on the planning of these institutions, suggested that when hospitals were to be erected architects should be called and made acquainted with the requirements of the institution. Hospitals, especially from a point of location, were frequently placed in ill-advised spots. This was the result of the site being purchased through the municipal process of satisfying friends, or the site being given by a philanthropic person. No man in the world knew less about the requirements of a hospital than an architect, unless the question were made a study, and no man was more in need of information when called in to make plans.

RECEPTION TO DELEGATES.

One of the pleasing features of the convention was the reception tendered the delegates at the Nurses' Residence by the Board and management of the Hospital for Sick Children. The spacious building presented a most cheerful appearance, and the 200 guests who visited the residence, which was recently erected by J. Ross Robertson and presented to the Hospital for Sick Children, were much impressed with the perfect character of the institution.

Dr. D. C. Potter, Chief of the Charitable Institution Division, Department of Finance, of New York City, gave an address on "The Private Hospital as a Municipal Agent." The place was crowded. The two hundred odd medical men and superintendents of hospitals from all over America applauded Dr. Potter's statements. They were of a practical nature, and couched in terms that could not be misunderstood.

"GRAFTERS!"

Dr. Potter's experience in New York City has been such that he has little faith in the average reformer. This class of individual is always on hand to "turn the grafter out" and take over the job for himself and his friends. Woe unto the hospital where the reformer installs himself with the avowed purpose of economically administering affairs. Under him there is sure to be changes which will involve dear fresh air, while fresh bandages will be an impossibility.

"There is no hippodrome of mirth so funny or so senseless as the general run of city governments, and sometimes they are tragic," said the doctor.

CANADIAN GIRLS.

"Canada for years," he continued, "has sent us a very large proportion of all the trained nurses educated in our city training

schools. They are splendid types of young womanhood and become the best of good nurses. I modestly suggest that Canada might send us a few reformers. The city lath-string is always out. Reformers come to us from the hamlets of far western States. Having been brought up in obscurity and the empty places, and having had no experience of life, they know best of all what is suited to congested districts in the metropolis," sarcastically remarked Dr. Potter.

PROFESSIONAL REFORMERS.

"Our Canadian friends should not neglect the virgin field of municipal reform in the cities of the States. Nothing pays like professional philanthropy, and the only capital required is carried under your hat.

The professional philanthropists, as a rule, hold that a civic community should do all its work of charity in institutions of its own creation and under its control. This is alleged to be necessary to augment civic property, develop the civic system and cultivate civic pride, but rarely necessary to furnish jobs to the pupils of the professional philanthropists."

COST COMPARED.

Dr. Potter gave some striking comparisons, showing the cost of maintaining patients in institutions under municipal control as against the charges of the private institutions. In private institutions the cost was from 80 cents to \$1.10 per day for each patient, while in the municipally controlled concerns it ranged all the way from a minimum of \$1.92 to \$10.20 per day.

Washington was selected as the next place of meeting at the closing session of the convention, when the following officers were elected:

President—Dr. John M. Peters, Rhode Island Hospital, Providence, R.I.

1st Vice-President—Dr. Arthur B. Ancker, City and County Hospital, St. Paul, Minn.

2nd Vice-President—Dr. J. N. E. Brown, Superintendent General Hospital, Toronto.

3rd Vice-President—Miss Emma A. Anderson, New England Baptist Hospital, Boston, Mass.

Secretary—Dr. W. L. Babcock, Grace Hospital, Detroit, Mich.

Treasurer—Dr. Asa Bacon, Presbyterian Hospital, Chicago.

Votes of thanks were passed to the local Committee on Arrangements, comprising J. Ross Robertson, Dr. R. W. Bruce-Smith and Dr. J. N. E. Brown, and the retiring officers.

Many of the delegates visited the Lakeside Home, the Hospital for Sick Children and the Toronto General Hospital during their stay.

The Canadian Journal of Medicine and Surgery

J. J. CASSIDY, M.D.,

EDITOR,

43 BLOOR STREET EAST, TORONTO.

Surgery—F. N. G. STARR, M.B., Toronto, Associate Professor of Clinica. Surgery, Toronto University; Senior Surgical Assistant Toronto General Hospital; N. A. POWELL, M.D., C.M., Prof. of Medical Jurisprudence, Toronto University; Consulting Surgeon Toronto General Hospital, etc.

Clinical Surgery—ALEX. PRIMROSE, M.B., C.M. Edinburgh University; Professor of Anatomy and Director of the Anatomical Department, Toronto University; Associate Professor of Clinical Surgery, Toronto University; Secretary Medical Faculty, Toronto University.

Orthopedic Surgery—E. E. MCKENZIE, B.A., M.D., Toronto, Surgeon to the Toronto Orthopedic Hospital; ex-President of the American Orthopedic Association; and H. P. H. GALLOWAY, M.D., Winnipeg, Man., Member of the American Orthopedic Association.

Gynecology and Obstetrics—GEO. T. McKEOUGH, M.D., M.R.C.S. Eng., Chatham, Ont.; and J. H. LOWE, M.D., Toronto.

Medical Jurisprudence and Toxicology—ARTHUR JONES JOHNSON, M.B., M.R.C.S. Eng., Coroner for the City of Toronto; Surgeon Toronto Railway Co., Toronto; W. A. YOUNG, M.D., L.R.C.P. Lond., Associate Coroner, City of Toronto.

Physiotherapy—CHAS. R. DICKSON, M.D., C.M., Queen's University; M.D., University of the City of New York; Electrologist Toronto General Hospital, Hospital for Sick Children, and St. Michael's Hospital.

Pharmacology and Therapeutics—A. J. HARRINGTON M.D., M.R.C.S. Eng., Toronto.

Pediatrics—ALLEN BAINE, M.D., Toronto; A. R. GORDON, M.D., Toronto; HELEN MACMURCHY, M.D., Toronto.

Oral Surgery—E. H. ADAMS, M.D., D.D.S., Toronto.

Dermatology—D. KING SMITH, M.B., Tor., Toronto.

W. A. YOUNG, M.D., L.R.C.P. Lond.,

MANAGING EDITOR

145 COLLEGE STREET, TORONTO.

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Clinical Medicine—ALEXANDER McPHEDEAN, M.D., Professor of Medicine and Clinical Medicine Toronto University; Physician Toronto General Hospital, St. Michael's Hospital, and Victoria Hospital for Sick Children.

Mental and Nervous Diseases—N. H. BEEMER, M.D., Mimico Insane Asylum; CAMPBELL MEYERS, M.D., M.R.C.S. L.R.C.P. (London, Eng.), Private Hospital, Deer Park, Toronto.

Public Health and Hygiene—J. J. CASSIDY, M.D., Toronto, ex-Member Ontario Provincial Board of Health, Consulting Surgeon Toronto General Hospital; and E. H. ADAMS, M.D., Toronto.

Physiology—A. B. EADIE, M.D., Toronto, Professor of Physiology Woman's Medical College, Toronto.

Pathology—V. H. PEARCE, M.D., C.M., Trinity University, Pathologist Hospital for Sick Children, Toronto, Associate Demonstrator of Pathology Toronto University; Surgeon Canadian Pacific R.R., Toronto, and J. J. MACKENZIE, B.A., M.B., Professor of Pathology and Bacteriology, Toronto University Medical Faculty.

Ophthalmology—J. M. MACCALLUM, M.D., Toronto, Professor of Materia Medica Toronto University; Senior Assistant Eye Department Toronto General Hospital; Oculist and Aurist Victoria Hospital for Sick Children, Toronto.

Nose, Throat and Ear—PERRY G. GOLDSMITH, M.D., 84 Carlton St., Toronto, Laryngologist and Aurist, Provincial Institution for the Deaf and Dumb; Senior Assistant Ear, Nose and Throat Department Toronto General Hospital.

Address all Communications, Correspondence, Books, Matter Regarding Advertising, and make all Cheques, Drafts and Post-office Orders payable to "The Canadian Journal of Medicine and Surgery," 145 College St., Toronto, Canada.

Doctors will confer a favor by sending news, reports and papers of interest from any section of the country. Individual experience and theories are also solicited. Contributors must kindly remember that all papers, reports, correspondence, etc., must be in our hands by the first of the month previous to publication.

Advertisements, to insure insertion in the issue of any month, should be sent not later than the fifth of the preceding month. London, Eng. Rep. sent at ve, W. Hamilton Miln, Thane House, 221 Strand, W.C. Agents for Germany, Saarbach's News Exchange, Mainz, Germany.

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TORONTO, NOVEMBER, 1908.

No. 5.

Editorials.

PROFESSOR WOODHEAD, OF CAMBRIDGE UNIVERSITY, GIVES THE OPENING LECTURE OF THE COLLEGIATE COURSE OF THE FACULTY OF MEDICINE OF THE UNIVERSITY OF TORONTO FOR THE SESSION OF 1908—1909

ON the occasion of the opening lecture of the session of the Faculty of Medicine of the University of Toronto, October 5th, 1908, the honorary degree of LL.D. was conferred upon German Sims Woodhead, Professor of Pathology, of Cambridge University, England.

Professor Woodhead had been invited by Dean Reeve to give the opening address to the students in medicine of the University of Toronto. He came to Toronto from Washington, where he had been attending the great tuberculosis conference.

After expressing his grateful appreciation of the honor done him by the University of Toronto, in conferring the degree of LL.D., Professor Woodhead read a paper on medical education, of which, writing from memory, we shall endeavor to give a brief summary. Without going so far as to recommend a B.A. course as the gateway of medical study, he advocated a good preliminary course in science, signalizing chemistry as being of special value. He cordially endorsed the five years' course in medicine, which has been recently adopted by the University of Toronto.

He thought that pathology should be included among the final subjects in medical study, as he had observed that students, who learned pathology during a primary course, neglected it after beginning clinical work.

A post-graduate course in medicine met with his warm approval, and he mentioned that Cambridge University encouraged her medical graduates to re-occupy the class rooms and laboratories, which had been the scenes of their youthful essays, in order that they might be enabled to take independent flights into the as yet unappropriated domains of medical science.

To one thing in particular he drew the attention of the student of medicine—the importance of originality—the avoidance of being a mere repeater of other men's words or thoughts. The student should strive to know the subject of his study with his own intelligence. Referring to the custom of teaching medicine through formal lectures, he admitted that it suited a past day, but said that it was unsuitable at the present time, when the medical student could acquire the opinions of the lecturer from his text-book without "his verbosity or muddiness."

In reference to the independent examination test for the license to practise in Ontario, he thought that the Ontario College of Physicians and Surgeons was interested in testing the capacity of candidates in the practical, rather than in the primary subjects of medical study.

Replying to a vote of thanks, moved by Professor Primrose, of the University of Toronto Medical Faculty, Professor Woodhead

addressed his remarks to the medical students, giving them sound advice, as to the earnestness with which they should work in laying the groundwork of their profession. Medicine being an exacting study, he advised them to be attentive to the condition of the body, it being impossible to accomplish good mental work, unless the body is kept in a sound condition. To some students physical exercise is a necessity; to others rest is more important than effort.

Professor Woodhead commends himself to us as a wise teacher and trainer of medical men; one who would get the best possible output out of his students, and yet not allow them to injure their health. Not a mere lecturer, he suggests ideas, allowing his hearers to do a little independent cerebration, so as to reach the solution of the question by themselves.

A scientist of renown, tactful, of fine presence and polished manners, the master of a cultivated style, there is no position in a medical faculty too high for him. J. J. C.

THE CANADIAN FORMULARY OF UNOFFICIAL PREPARATIONS, 1908

IN the August, 1908, number of this journal, at page 109, the publication of a second edition of the Canadian Formulary of Unofficial Preparations, issued by the authority of the Ontario College of Pharmacy, was editorially noticed. The object of this work, as stated in the preface, is the establishment of uniform and authoritative standards for pharmaceutical preparations in active demand by the medical and pharmaceutical professions. They are unofficial preparations. Commenting on the work, we said: "Many of the published formulæ are probably intended to be used as guides in preparing substitutes for patent or proprietary medicines. Hence, their publication in the C. F. would go to show that there is a popular demand for the latter preparations. Then, why should not the laity get what they ask for?"

In a letter published at page 315 of this issue, Mr. Hargreaves, Vice-President of the Ontario College of Pharmacy, writes: "I emphatically repudiate the imputed charge of substitution on the part of Canadian pharmacists." He does not offer any explanation of the meaning which he attaches to substitution. We shall, there-

fore, place before our readers some statements confirmatory of what we meant to convey by that term. For instance, Formula No. 79.

(C. F.) *Liquor Ferri et Mangani Peptonatis*, is said by pharmacists to be an imitation of the formula of Gude's *Pepto-Mangan*, and is probably intended for use in cases such as those in which that proprietary medicine is indicated.

Were a physician to prescribe Gude's *Pepto-Mangan* for a patient, and were a pharmacist to whom the prescription was brought to substitute a bottle of *Liquor Ferri et Mangani Peptonatis* (C. F.), what would be the moral, professional and financial aspects of the pharmacist's procedure? Even if the C. F. preparation were similar in all respects to the proprietary one, the manufacturer of *Pepto-Mangan* would be cheated out of a sale, the pharmacist would be guilty of unprofessional conduct; by selling for a dollar a bottle of *Liquor Ferri et Mangani Peptonatis*, which he buys at \$6 a dozen, the pharmacist would make a larger profit than if he were to sell, for a dollar, a bottle of Gude's *Pepto-Mangan*, which costs him \$10 a dozen.

If Mr. Hargreaves wishes to repudiate substitution of this kind, he does well to speak emphatically. So far as we know, he represents in his declaration the opinions and conduct of the vast majority of Canadian pharmacists.

There is another form of substitution: Pharmacists may try to persuade physicians living in their neighborhood to prescribe *Liquor Ferri et Mangani Peptonatis*, instead of *Pepto-Mangan*. If successful in their efforts, Formula No. 79 (C. F.) will, probably, be used as a guide in preparing a substitute for a proprietary medicine. Other proprietary medicines may be treated in the same fashion. Thus, Formula No. 71 (C. F.), *Liquor Antisepticus*, copied from the 1905 edition of the United States Pharmacopeia, is a substitute for *Listerine*. It is also true that Formula No. 72 (C. F.), *Liquor Antisepticus Alkalinus* (copied from the N. F., 1905), is an imitation of *Glyco-Thymoline*. We have authority for the statement that, in the United States, a number of retail druggists have taken it upon themselves to inform physicians that Formula No. 72 is identical with *Glyco-Thymoline*.

Pharmacists know of other formulas published in the Canadian Formulary which are intended to be used as guides in preparing substitutes for proprietary medicines in active demand by the

medical and pharmaceutical professions. It would be idle, therefore, to endeavor to repudiate this latter form of substitution and its application in actual business.

If Canadian pharmacists feel disposed to utilize the formulae of the Canadian Formulary in their business, there are good reasons for doing so. It goes without saying, and it is no harm to say it here, that these formulae would not appear in their present dress in the Canadian Formulary, if the usefulness and acceptability of the proprietary medicines of which they are copies had not been proved to the laity, the pharmacists and medical profession of Canada.

What then? As the C. F. is unofficial, physicians are not bound to recognize it. If Canadian pharmacists, instead of selling the original proprietary medicines, prefer to prepare and sell imitations of them, that is their affair. Probably, no objections will be made by anyone, so long as they do not supply preparations made from the C. F. when patent or proprietary medicines are called for, on prescription, or otherwise.

J. J. C.

EDITORIAL NOTES.

Oral Sepsis and the Opsonic Index.—That Oral Sepsis can lower bodily resistance and expose an otherwise healthy individual to infectious disease is a reasonable proposition. Koch was able to determine the infection of animals fed with cholera vibrios, after neutralization of the contents of their stomachs. Similarly, the swallowing of pus from suppurating gums would have a neutralizing effect on the contents of the stomach, and would predispose to such diseases as typhoid fever, dysentery and cholera. In the treatment of pyorrhea alveolaris, or alveolar periostitis, as it is termed by Mr. Kenneth Goadby, a dentist of London, England, the following method is recommended: (*a*) the removal of all teeth where the sockets and over 50 per cent. of the attachment of the bone is destroyed, (*b*) the eradication of the pockets around the teeth by surgical methods—cleaning, scraping, escharotics. To these commonly practised methods Mr. Goadby adds the use of vaccines. He has reported two cases of acute alveolar periostitis, which were cured by the use of vaccines (*vide British Medical Journal*, Aug. 22,

1908, p. 477). Mr. Goadby thinks that many of the so-called cases of scurvy in the Indian jails, and elsewhere, are really instances of pyorrhea alveolaris. In reference to the treatment of this disease with vaccines, he says: "As in many instances staphylococci were the invading organisms, a dose of 100 mm. of mixed staphylococcal vaccine might well be given in any acute case, the local treatment of the gums to be performed after the negative phase had passed; two subsequent inoculations of similar doses of vaccine could also be given at intervals of a week. Wherever possible, each case should be treated individually." In reference to the advantages resulting from adequate local treatment in chronic pyorrhea alveolaris—improved general health of the patient and a sounder condition of the gums—there is a consensus of opinion among dentists. When teeth have not become too loose, they can be retained, the loose receding gum tightens and grasps the teeth, preventing further displacement. Whether vaccinal treatment would cure chronic cases of pyorrhea alveolaris is a question to be solved by experiment. The success won by Mr. Goadby in his two acute cases would seem to show that similar treatment might be tried in chronic cases, which had proved rebellions to careful local treatment. This view, however, is purely hypothetical. Speaking generally, one might say that, when all sources of local inflammation in diseased gums are removed, the leucocytic outflow towards them ceases, and it would seem uncalled-for to provide an opsonic banquet for leucocytes, which are not campaigning on the field of battle, but are simply leading a humdrum garrison life. Some cases of acute pyorrhea alveolaris respond very promptly to local treatment. In these cases the opsonic index to staphylococci is high, and, after the gum pockets have been cleaned and cauterized, suppuration in them ceases and the gums tighten. In other acute cases, even though local treatment has been practised betimes, suppuration in the gum pockets continues and the gums remain loose. In those cases the opsonic index to staphylococci is low, and vaccinal treatment is indicated. Between these extremes there are acute cases in which the opsonic index may be neither high nor low—just as in cases of acne vulgaris:—vaccinal treatment will be necessary in some cases of pyorrhea alveolaris; but it will not be called for in the majority of them.

Defective Teeth in School Children. — Frank Harrison, M.R.C.S. (Eng.), L.D.S. (Edin.), President of the Dental Section of the British Medical Association, in his address at the Sheffield meeting, spoke of the benefits likely to result from the investigation of the physical condition of school children, by virtue of the English Medical Inspection Act. This examination is to be made by medical men, who, together with other defects and diseases, will have to observe the condition of the teeth and report thereon. He stated that dental disease is the commonest of all diseases in Britain, in the greater part of the rest of Europe, and in other parts of the world as well. Unfortunately, the real causes of this commonest of all diseases are as yet unknown. The locked-up secret of its prevalence is, therefore, one which appeals to physiologists and pathologists, who have the advantages of research work at their disposal. At present, dentists are engaged in treating effects with some measure of success; preventive treatment and the care of children's teeth are very beneficial. Something more is requisite, the cause, or causes, of this widespread dental disease should be ascertained, and, if possible, treated. The following quotation from the Bulletin of the Chicago School of Sanitary Instruction, September 26, 1908, corroborates Mr. Harrison's assertions: "Physical examinations were made by medical school inspectors of 4,195 school children. Of this number, 3,388 were found defective and 1,919 advised to seek treatment. Defects found were distributed as follows: Teeth, 1,215; hypertrophied tonsils, 750; vision, 649; nasal breathing, 134; adenoids, 129; hearing, 100; nutrition, 97; anemia, 95; enlarged glands, 43; cardiac diseases, 35; mentality, 35; skin diseases, 27; orthopedic, 27; palate, 24; pulmonary diseases, 21; nervous diseases, 7. If the physiologists and pathologists of England, America and Canada were to interest themselves in searching for the causes which underlie the widespread dental disease observed in the school children of those countries, valuable discoveries in dental hygiene might be made, and the public would be more thoroughly instructed in the prevention of dental diseases.

Overtaxing of Locomotive Engineers of Fast Trains.—As the exigencies of modern travel have introduced "flyers" in Canadian railroads, the duties of locomotive engineers have become more severe. As far as is known, duty on slow trains does not cause the same severe strain. On very fast trains, it is said that engine

duty cannot be endured for more than a few years. Some of the engineers on the "flyers" are said to develop neurasthenia, after working four years, or even less. Nervous breakdown is said to appear in them suddenly, not only from exhaustion, but from the cumulative effect of the millions of little traumatisms produced in their tissues by the jarring, shaking, jolting engine, driven for many hours at terrific speed. A locomotive engineer, affected with neurasthenia, would be unfit for duty, especially as nervous breakdown in neurasthenic persons may appear quite suddenly. The results following from a slight error of judgment in such a case may be awful. As the wear and tear of the tissues of the locomotive engineers are increased by the speed of these "flyers," frequent examinations of the engineers as to the accuracy of their senses and the soundness of the nervous and muscular systems are necessary. Railroad surgeons are aware of these truths, and, doubtless, give them the consideration which their importance demands.

When Sodium Bicarbonate is Best Administered.—The bicarbonate of sodium, when given before meals, serves to increase the flow of gastric juice, and is found to relieve the pain of tardy digestion in an effective manner, in cases of deficiency of acid. It then acts as a sedative to the irritated stomach, and relieves the painful conditions arising from a deficient secretion of gastric juice. When taken after meals, it is useful in counteracting excessive acidity of the stomach. Butler says that the acidity due to the formation of fatty acids, the result of defective digestion, is not relieved by the administration of this salt after meals, but, if taken before meals, it corrects the deficiency of gastric secretion, to which the disordered digestion is due. In atonic dyspepsia, when administered with vegetable bitters, this salt serves a useful purpose. Writers on therapeutics agree that some time should be allowed to elapse between the administration of the dose and the ingestion of food. This period varies with the different quantities of bicarbonate. The maximum of acidity is generally attained in two hours after a dose of eight grains—in three hours after one of sixteen grains. Small doses may, therefore, be given at meal times, but larger quantities about an hour before meals. The dose itself must be varied according to the case: in some instances as much as eighty grains will be required, given an hour before meals to attain the maximum of acidity; but this quantity is much too great for

patients with marked hyperacidity; for these eight grains may prove sufficient. In a case of dyspepsia characterized by uneasiness felt at the cardiac end of the stomach after eating, belching, somnolence, low spirits and irritability of temper, a mixture made after the following formula served a useful purpose:

R Sodii bicarbonatis ʒiiss
 Infusi gentiane co. ʒvi M.
 Sig. ʒss an hour before meals

Tuberculosis of the Bones and Joints.—Dr. Cadbury (Fourth Annual Report of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis) says that in the four years from February 1, 1903, to February 1, 1907, 4,840 patients were examined at the Institute, and of these, 3,733 showed some tuberculous lesion, for the most part pulmonary. Of the 3,733 patients, only 55, or 1.47 per cent., gave a history of tuberculosis of the bones or joints. Forty-one of the cases were males and fourteen females, which might be explained by the fact that males are more exposed to injury than females. The source of the contagion in the fifty-five cases is difficult to trace. In twenty-three there was a possibility of contagion from parents, brothers and sisters or other associates, who had suffered or died from some form of tuberculosis, during or preceding the development of the bone complications. In thirty of the cases no definite history of contagion could be discovered, so far as the bone complications were concerned. In four of the fifty-five cases no pulmonary tuberculosis was demonstrated. In the remaining fifty-one (92.72 per cent.) pulmonary lesions were demonstrated. In the fifty-one cases of combined osseous and pulmonary disease the bone process was quiescent in 56.86 per cent., active in 37.25 per cent., and not recorded in 5.88 per cent. In four the pulmonary process was the primary one, and in each instance the bone disease was in an active state at the time of the examination. In thirty the bone disease was apparently the predecessor of the pulmonary lesion, but of these thirty only six showed active bone tuberculosis, while twenty-four gave evidence of an arrested or latent process, so that the preliminary complication may have been due to a new infection. In seventeen of the cases it was impossible to ascertain from the history whether the pulmonary or bone infection was primary. In 60 per cent. of the 55 cases the bone disease was active, during

the first twenty years of life. This approximates Billroth's estimate that one-half of all cases of bone tuberculosis occur during the first two decades of life. Statistics generally agree in showing, that the vertebrae are far more susceptible to the invasion of tubercle than the other bones of the body. The bones affected in the fifty-five cases treated at the Henry Phipps Institute were the following:

Spine.....	22	=	40	per cent.
Hip-joint	12	=	21.81	"
Knee-joint.....	6	=	10.90	"
Femur	2	=	3.63	"
Elbow-joint	2	=	3.63	"
Jaw	2	=	3.63	"
Bones of forearm	2	=	3.63	"
Ribs and sternum	2	=	3.63	"
Shoulder	1	=	1.81	"
Entire arm	1	=	1.81	"
Hip and femur.....	1	=	1.81	"
Hip and knee	1	=	1.81	"
Tibia and femur	1	=	1.81	"

J. J. C.

PERSONALS.

DR. T. ALEXANDER DAVIES, 56 Wellesley Street, desires to announce to the members of the profession that he is confining his practice exclusively to the eye, ear, nose and throat.

DR. CHARLES M. STEWART, who has been doing post-graduate work in London this last six years, has returned to Toronto and opened an office at 142 Carlton Street. He will confine his practice to diseases of the ear, nose and throat.

Correspondence.

The Editor cannot hold himself responsible for any views expressed in this Department.

EDITOR OF CANADIAN JOURNAL OF MEDICINE AND SURGERY:

Dear Sir.—In your August issue appears a comment on “The Canadian Formulary of Unofficial Preparations.” After stating the object for which the work is published, follows an invidious insinuation that “Many of the published formulas are probably intended to be used as guides in preparing substitutes for patent or proprietary medicines.”

Will you please read in the second paragraph of the preface to the work that “Recognition of certain formulas bearing semi-official titles prepared according to the formulas prevailing in localities has demonstrated the necessity for the adoption of some uniform system of authoritative formulas, whereby the physician can intelligently prescribe and the pharmacist dispense, and the result expected and obtained be uniform and identical throughout the whole of the Dominion of Canada.”

The formulas reveal their constituents and medicinal properties, and doses, and should require no brass band claims for their virtue or usefulness, which is clearly indicated to those with a knowledge of *materia medica*. The formulas are for the express purpose of establishing standards for tested and tried preparations, to be used by Canadian physicians, of which the physician has full knowledge and confidence as to purity and constituents, and from which he may expect the result indicated by the medicinal properties of the ingredients.

I emphatically repudiate the imputed charge of “substitution” on the part of Canadian pharmacists. Its use in a medical journal is a surprise and revelation to me, as I had concluded that manufacturers and advertisers of patent and proprietary medicines had a monopoly of the word, and that its chief merit lies in its capacity for protecting secrecy, restricting competition and retarding progress or advancement in truly professional or scientific lines of thought or action.

Furthermore, the intention of the publication of the Canadian Formulary is directed entirely against the use in any form by the physician of patent or proprietary medicines for the laity, as is plainly evidenced by the technical titles attached to each formula. Ethical pharmacy for ethical physicians is the true object and desire of the pharmaceutical bodies responsible for the publication of the C. F., and the physicians of Canada are requested to test the formulas and submit them to an honest, intelligent criticism.

Yours very truly,

JOHN HARGREAVES,

Chairman of Research Committee of the Ontario College of Pharmacy.

Toronto, 18th August, 1908.

Obituary

DEATH OF DR. ALEXANDER K. FERGUSON.

DR. ALEXANDER K. FERGUSON, whose recent tragic death by being run over by a street car, while he was crossing the track, too near the coming car, was a highly respected graduate of Trinity University, and also a Fellow (by examination) of Trinity Medical College, of 1894. He was an excellent student and became a very successful practitioner, devoted to his profession, and having the confidence of all who knew him best and longest.

His funeral was largely attended by his former patients and friends and by many of the office-bearers and members of Knox Church, Toronto, of which he was an elder. The terrible and sudden death of her husband was a heavy blow to his esteemed widow, who, with two young children, a son and daughter, mourn their irreparable loss.

Dr. Walter B. Geikie, the founder and Dean of Trinity Medical College for the last twenty-five years of its existence, and Dr. R. A. Thomas, M.R.C.S. (Eng.), a fellow-student of Dr. Ferguson at Trinity Medical College, were amongst the pall-bearers. The Rev. Mr. Winechester, of Knox Church, conducted the service and delivered an admirable address, full of warm sympathy for the bereaved family, assisted by the Rev. Dr. Turnbull and the Rev. Mr. Lindsay.

A. J. G.

News of the Month.

BRODIE COMES TO 'Varsity.

T. G. BRODIE, M.D., London, F.R.S., has cabled his acceptance of his appointment by 'Varsity Board of Governors as Professor of Physiology in the Faculties of Arts and Medicine at 'Varsity, and to have charge of the teaching of physiology to the students of the Ontario Veterinary College.

Dr. Brodie was educated at King's College School, London; St. John's, Cambridge, and King's College, London, and has held the following important appointments in London: Director of the research laboratories of the Royal College of Physicians and Surgeons; Professor Superintendent Brown Animal Sanitary Institution, University of London; Professor of Physiology, Royal Veterinary College; Lecturer on Physiology, London School of Medicine for Women, and Lecturer in Physiology at St. Thomas' Hospital Medical School.

Mulford's Salesmen's Post-Graduate Course.—Mr. A. W. Parsons, city representative of the H. K. Mulford Co., and Mr. W. S. M. Enouy, retail manager for W. Lloyd Wood, spent a pleasant and profitable ten days in Philadelphia, attending the Mulford Salesmen's Post-Graduate Course. This departure instituted by the Mulford Co. brings periodically all sales and detail men in close touch with the heads of each department. The pharmaceutical and biological buildings are gone over in detail, and all that is new pertaining to the standardization, assay and physiological testing of drugs, as well as all processes of manufacture, are clearly demonstrated. Likewise, the production of antitoxins, vaccines, tuberculins and Wright's bacterial vaccines is shown. Lecture courses, descriptive of each, are given by the Mulford scientific staff, aided by stereopticon views, illustrating therapeutic actions as well as interesting details of manufacture. Physicians when in Philadelphia are at all times cordially invited to visit the Mulford plant.

The Physician's Library.

Consumption: How to Prevent It and How to Live With It. Its nature, causes, prevention, and the mode of life, climate, exercise, food, and clothing necessary for its cure. By N. S. DAVIS, A.M., M.D., Professor of Principles and Practice of Medicine, Northwestern University Medical School, Chicago; Physician to Mercy and Wesley Hospitals. Second Edition, thoroughly revised. 12mo. 172 pages. Cloth. Price, \$1.00 net. Philadelphia, Pa.: F. A. Davis Company; publishers.

This little book has been reprinted a number of times since it first appeared, seventeen years ago. It would be much improved if the directions for daily life of the patient, with quiescent disease, were quite apart from those to be followed by the patient who has daily temperature. It is a good guide for the person predisposed to tuberculosis, and is splendid in its chapter to those associated with the consumptive, but it would not be wise to have a patient with active tuberculosis follow it without further and more explicit direction. We hope that, in another edition, the limits of rest and exercise will be more definite. Hurried proof-reading probably accounts for errors such as *woolenware*, *Los Vagus*, *Gobursdorf*. Modern usage would suggest "sanatoriums" instead of "sanitaria," the word which is constantly used.

J. H. E.

Medical Gynaecology. By HOWARD A. KELLY, A.B., M.D., LL.D., F.R.C.S. (Hon. Edin.), Professor of Gynaecological Surgery in the Johns Hopkins University, and Gynaecologist to the Johns Hopkins Hospital; etc. Pp. 662; 163 illustrations, for the most part by Max Broedel and A. Horn. New York and London: D. Appleton & Company. 1908.

This recent production of Dr. Kelly's should do much to satisfy a need that is pressing. It is especially adapted for the use of the general practitioner, into whose hands practically all gynaecological patients first come. Dealing, as it does, with the various diseased conditions and their management up to the point where the gynaecological surgeon, as such, becomes essential, it is not burdensome. For the student at college it is excellent though insufficient as a work on gynaecology, because it does not treat of the surgeon's work in respect to gynaecological conditions—the students of to-day being expected by slave-driving medical educationists to attain a specialist's knowledge in all and sundry departments of medicine

and surgery before graduation. A careful and complete perusal of its pages from cover to cover convinces one of the high capabilities of the writer, both as a surgeon and as an instructor in the science of gynaecology. The information contained in the book is vast, valuable and of a practical kind. Reading it has been a profitable pleasure. It is true that a certain amount of plodding was necessary to get through with "Affections of the Sacro-iliac Joint," and the descriptions of the syphilides, but no doubt their importance deserves the space given to them.

The illustrations are of high order, though, perhaps somewhat more profuse than is necessary to clear understanding. Nothing would be lost by the omission of such a one as appears on page 48, "Toilet Accommodation for Twenty-one Families," or of the one on page 462 in which the care-worn, despondent attitude is anything but soul-inspiring.

In all places and at all times references to "gynaecological tinkering" abounds. Dr. Kelly's valuable book should hasten the demise of such detrimental practice.

F. W. M.

Physical Signs of Diseases of the Thorax and Abdomen. By JAMES E. H. SAWYER, M.A., M.D. (Oxon.), M.R.C.P. (Lond.), Casualty Assistant Physician and Medical Registrar, the General Hospital, and Physician to Out-Patients, the Children's Hospital, Birmingham. 188 pages, 23 illustrations. \$1.50. London: Bailliere, Tindall & Cox. Canadian agents: J. A. Carveth & Co., Ltd. 1908.

A well-written guide for students, and one by which the busy practitioner may review his knowledge hurriedly. It covers thoroughly the ground indicated by its title, though we regret that, in common with many modern text-books, there is less attention paid to examinations by inspection than the importance of the method demands.

J. H. E.

The Baby: Its Care and Development. For the use of mothers. By LE GRAND KERR, M.D., author of "Diagnostics of the Diseases of Children"; Professor of the Diseases of Children in the Brooklyn Post-Graduate Medical School; Attending Physician to the Children's Department of the Methodist Episcopal (Seney) Hospital; Visiting Physician to the Children's Wards of the Williamsburgh Hospital and of the Swedish Hospital in Brooklyn, N.Y., etc. Brooklyn, New York: Albert T. Huntington. 1908.

This little book serves as a guide to mothers in the rearing of their children. It is essentially practical; the language and directions are plain; the chronological arrangement of the chapters enables the mother to follow the development of the child and to

discover any faults that may arise. The book is well designed to secure thorough co-operation between mother and physician, not calculated to do harm by suggesting diagnosis and treatment, as most of the "Family Doctor" books do. "A little learning," etc. Physicians can safely bring this small volume to the notice of mothers.

W. H. P.

A Woman's Way Through Unknown Labrador. An account of the exploration of the Nascaupsee and George Rivers. By MRS. LEONIDAS HUBBARD, JUNIOR. With portraits and illustrations. Toronto: William Briggs. 1908.

The graphic description by Dillon Wallace of the unfortunate ending of the expedition fitted out by Leonidas Hubbard, Junior, is still fresh in the memory of those who perused "The Lore of the Labrador Wild." The authoress of this work, the wife of Leonidas Hubbard, undertook, and successfully carried out, her husband's undertaking. Mrs. Hubbard is a Canadian woman, young and full of determination and Canadian vigor, and the task undertaken by her would have been appalling to many of the sterner sex; but, profiting by her husband's failures, and by the assistance of George Elson, her husband's trusted and proven friend, she succeeded in overcoming every obstacle, and, traveling up the Nascaupsee and down the George rivers by canoe and long and tiresome portages through the roughest and most desolate country on earth, she carried out her husband's original plan, and now gives her account of her expedition, which is as interesting as it is remarkable.

A. J. H.

Borderland Studies. Miscellaneous Addresses and Essays pertaining to Medicine and the Medical Profession, and their relations to general science and thought. Volume II. By GEORGE M. GOULD, M.D., formerly editor of the *Medical News*, the *Philadelphia Medical Journal*, *American Medicine*; author of a series of medical dictionaries, "Biographic Clinics," "Concerning Lafcadio Hearn," "Right-handedness," etc. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. 1908.

This is a series of addresses and essays arranged in book form. The book contains fourteen chapters and two hundred and twenty-eight pages. It is needless to say, coming from the pen of so talented an author as Dr. Gould, the work is beautifully written, intensely interesting and instructive.

Chapter I.—the history of the house—is profusely illustrated, and shows the progress of civilization by the house from the earliest times and most primitive peoples to the palaces of the present day.

It is impossible in a short notice to do justice to this work, or even to mention essential features of each chapter. All the chapters

are good. Chapter III., on the seven deadly sins of civilization, deals with Tobacco, Coffee and Tea, Alcohol, Sugar, Venereal Diseases, the Modern House, and Eye Strain; and Chapter V., on Disease and Sin, should be widely read, not only by the medical profession, but by the general public.

In Chapters VII. and VIII., "Some Intellectual Needs of American Growth" and "Concerning Crank Meglomanic Morphomaniac, Dotard, Criminal and Insane Physicians," the author deals with present-day healers, quacks, new thought, Eddyites, cranks with medical degrees, and fake journals. These people are handled without gloves, and their methods exposed in such a way that one wonders so many fools are found who believe such nonsense. The chapters on "The History and Psychology in Words" and "Style" are excellent, and will well repay a careful reading. Price of book \$1.50.

W. J. W.

Pulmonary Tuberculosis and All Complications. By SHERMAN G. BONNEY, M.D., Professor of Medicine, Denver and Gross College of Medicine, Denver. Cloth, \$7.00 net; half morocco, \$8.50 net. Philadelphia and London: W. B. Saunders Company. 1908. Canadian agents: J. A. Carveth & Co., Limited, Toronto.

This is a very exhaustive treatise on the subject of pulmonary tuberculosis, written from the author's personal experience, and not a compilation from the writings of others. Pathology, symptomatology and diagnosis are fully treated. Tuberculosis of other organs as a complication in pulmonary tuberculosis receives much attention, and this makes the book a valuable one for the general practitioner, as this is rarely fully dealt with in text-books on the subject. Non-tuberculous complications considered include mixed infection, pregnancy, syphilis—we regret there is not a chapter on diabetes mellitus. Prophylaxis is given fifty pages, covering notification, supervision, education of public, and administrative control.

Special attention is given to the regulation of out-of-door life—tents, sleeping porches, summer cottages all being well illustrated. The sanatorium and climate in relation to the disease are discussed at length. Treatment is very exhaustive, particularly non-medicinal measures. Drug therapy is noticeable by the short space given to it. One misses the familiar pages of prescriptions so often filling pages of works on treatment. We must compliment the author on the importance given to drugless therapeutic measures.

With the tuberculins so much in use at present the book would have been a more complete guide had there been more specific directions for the administration of the vaccines as practised to-day.

The results of treatment in Colorado are strongly emphasized, to the exclusion of a fair recognition of, perhaps, equally good results under careful supervision elsewhere.

A few errors have crept in, in the use of names of men well known; fumigation does not seem to be quite up to date, and under laryngeal tuberculosis we miss any reference to the value of resting the voice in treatment.

The volume comprises 778 pages, has 189 original illustrations, of which 20 are in colors; also 60 X-ray photographs, all original.

It is a treat to read the book and to feel it is the contribution principally of a busy physician's personal observations.

J. H. E.

A Manual of Diseases of Infants and Children. By JOHN RUHRAH, M.D., Clinical Professor of Diseases of Children, College of Physicians and Surgeons, Baltimore. Second Revised Edition. 12mo volume of 423 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Flexible leather, \$2.00 net. Canadian agents: J. A. Carveth & Co., Limited, Toronto.

When the author gave us the first edition of this work he modestly announced that it had been prepared for the medical student to enable him to grasp quickly the more important parts of the subject, not to supplant the larger text-books. The idea was a good one and filled the want most satisfactorily. It has also been of service to the busy physician.

The chapter on Infant Feeding is more comprehensive than might be expected in a work of this scope.

This edition has several sections added, viz., Medical Inspection of School Children, The Duration of Danger of Contagion after Infectious Diseases, and The Return to School of Children after Exposure to Contagious Disease.

A short bibliography of the current pediatric literature has been also added; the list covers only journals of 1905 and 1906. This will teach the student how to use the journals for extending his knowledge.

The medical student will do well to furnish his library with this rapid reference book for clinical use.

W. H. P.

Points of Practice in Maladies of the Heart. Lumberan lectures at the Royal College of Physicians of London. By JAMES SAWYER, Knt., M.D. (Lond.), F.R.C.P., F.R.C.S. (Ed.), F.S.A.: Consulting Physician to the Queen's Hospital; lately a Professor of Medicine in the Queen's College. Birmingham: Cornish Bros., Limited. 1908.

This book consists of a series of three lectures given at the Royal College of Physicians, and dealing with points of practical interest in diseases of the heart. In the matter of diagnosis the author rightly insists on as full a knowledge as possible of the various functions of the body, and takes cognisance of the various

outside influences that may directly or indirectly affect the heart. He reviews the methods of diagnosis up to the present, and describes carefully "Inspection and Palpation" of the Precordial Area. These descriptions are very fine, and stimulate one to improve his own methods. We were especially pleased with the method of inspecting the chest in cases of pericardial adhesions. He favors a solid cedar stethoscope and describes the one he uses.

In the third lecture we were most struck with his remarks on "Pulmonary Accentuation," the causes and dangers of the condition.

The work closes with some very practical remarks on treatment, mentioning exercises and giving the indications and contraindication for digitalis, of which drug he prefers the powdered leaf and the infusion.

W. J. W.

State Board Questions and Answers. By R. MAX GOEPP, M.D., Professor of Clinical Medicine at the Philadelphia Polyclinic. Octavo volume of 684 pages. Cloth, \$4.00 net; half morocco, \$5.50 net. Philadelphia and London: W. B. Saunders Company. 1908. Canadian agents: J. A. Carveth & Co., Limited, Toronto.

This volume may prove useful to the student preparing for examination. The questions and the answers seem to us very elementary—especially some of the answers. If, however, a student knows his work, he will not require *it*. If he doesn't and wants to *cram* for an examination, the book may be a help. s.

Surgery. By JOHN ALLEN WYETH, M.D., LL.D. (University of Alabama): President of the New York Academy of Medicine; President of the Medical Faculty of, and Surgeon-in-Chief to, the New York Polyclinic Medical School and Hospital; ex-President of the American Medical Association, of the New York State Medical Association, and of the New York Pathological Society; formerly Attending Surgeon to Mount Sinai and to St. Elizabeth's Hospitals; Honorary Member of the Texas State Medical Association and of the Medical Society of New Jersey; author of "Essays in Surgical Anatomy and Surgery"; awarded the first and second prizes of the American Medical Association in 1878 and "The Bellevue Alumni Association Prize" in 1876, etc. With 864 illustrations. Marion, Sims, Wyeth & Co., publishers, 244 Lexington Avenue, New York City. 1908. Canadian agents: D. T. McAinsh & Co., 123 Bay Street, Toronto, Ont.

The name John Wyeth stands on the top rung of the ladder to all that is best in American surgery, and any work bearing his imprint as author must have a reputation all its own. The author made a name for himself twenty years ago when he published his "Text-Book on Surgery," which was later re-edited in two revised

editions. Wyeth's Text-Book met, and justly so, with an extensive sale.

His latest book, "Wyeth's Surgery," is a large volume, consisting of 800 pages, and contains nearly 850 illustrations, 57 of which are in colors. It comprises quite an exhaustive study of surgery in almost all of its branches. "Wyeth's Surgery" should stand as one of the most modern works for many years to come. Dr. Wyeth has been particularly happy in the arrangement of his subjects. The volume is devoted, not alone to major operations, but to minor surgery as well, being thus a book for both reference and study.

Essentials of Dietetics in Health and Disease. A Text-book for Nurses and a Practical Dietary Guide for the Household. By AMY ELIZABETH POPE, author, with ANNA CAROLINE MAXWILL, of "Practical Nursing," and Instructor in Practical Nursing and Dietetics in the Presbyterian Hospital School of Nursing, Instructor in Dietetics in the School of Nursing of the New York Hospital, Mt. Sinai Hospital, and Smith's Infirmary, Staten Island, and MARY L. CARPENTER, Director of Domestic Science for the Public Schools, Saratoga Springs, N.Y. New York and London: G. P. Putnam's Sons, The Knickerbocker Press. 1908. Price, \$1.75.

The "Essentials of Dietetics" is a work well suited to the nurse or for use in the home. It is not too technical, gives some knowledge of the chemistry of foods, directions for buying, cooking and serving foods, and is written in a style suited for class work in hospital training schools. After a short chapter on the digestion and absorption of foods follows a description of the different kinds of foods, and also a chapter on food values and tables of the approximate composition of the common food products.

There is a chapter on infant feeding, with directions for the modification of milk.

Part II. contains about 70 pages of recipes for invalids.

W. J. W.

Hygiene for Nurses. By ISABEL McISAAC, author of "Primary Nursing Technique," graduate Illinois Training School for Nurses; formerly Superintendent of the Illinois Training School for Nurses; Honorary Member of the British Matrons' Council; Charter Member of the Nurses' Associated Alumnae of the United States; etc., etc. New York: The MacMillan Co. 1908.

This is a capital little book. It is essentially practical, its object being to inculcate into nurses under training all that is best and most important regarding hygiene, and should be found distinctly useful.

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Original Contributions.

SHORT NOTES ON THE TREATMENT OF COMMON DEFORMITIES RESULTING FROM DISEASE.

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THE commonest deformities resulting from disease as opposed to deformities resulting from conditions preceding birth or violence after birth, may be classified as those due to tuberculous disease, to paralysis, to posture and to rickets. Each of these will be discussed separately.

As it is not the purpose of this paper to discuss the etiology, pathology, or treatment of these diseases causing deformities, I shall confine myself to a simple narration of how these deformities may be treated after their development.

DEFORMITIES DUE TO TUBERCULOUS DISEASE.

Tuberculosis is the most common of all the causes of deformity seen in this country, and as such demands our particular attention.

The commonest deformities resulting from tuberculosis may be divided into those of the spine, hip, knee, ankle, shoulder, elbow and wrist.

Speaking generally, the treatment of tuberculosis of any form is by rest, fresh air, and good food.

Deformities of the Spine.—The common deformities of the spine, due to tuberculous disease, are kyphosis and scoliosis. The

former is often most marked, the latter is rarely so. The former is a symptom which must be combated; the latter ordinarily may be disregarded.

Kyphosis is a danger to the patient in several ways, besides being an unsightly deformity. Beyond doubt its advent is sometimes associated with paraplegia, although this is rarely due to the direct pressure of bone, but rather to effusion or an extension of the inflammation. In the later stages of the disease, through the kyphosis, compression may be exerted on important organs and untoward symptoms may result. Acute or angular kyphosis is more serious than the more rounded variety, as this more frequently tends to cause compression, and in the thoracic region such compression may be followed by acute dilatation of the right side of the heart, and death may ensue. Thus, in treatment, kyphosis must be guarded against by carefully-adjusted apparatus. Rest in the treatment of tuberculous disease of the spine is not sufficient. Rest must be combined with fixation in the hyper-extended position.

The initial position of the tuberculous lesion in this affection is well known to you. The disease is said to begin in the anterior part of the body of a vertebra, adjacent to, and perhaps including, an inter-vertebral disc. These become eroded, and from the superimposed body weight the spine tends to fall forwards,—to become flexed. Now rest to the joint and the prevention of attrition are our main objects in the treatment of a tuberculous arthritis. This is best secured by hyper-extension. This fact is easily demonstrated by examining a cabinet specimen of the spinal column. I shall not enter into the details of treatment in the different regions of the spine by hyper-extension; sufficient is it to say that there is no region of the vertebral column that cannot be hyper-extended, and this without force. Hyper-extension may always be maintained by the use of plaster of Paris or a brace.

Before leaving this subject we should consider the treatment of those patients who are first brought to us with marked deformity. In these, although it is wise to attempt a gradual reduction of the deformity, the use of strong force, such as was recommended by Calot and others, is not advised, but rather is considered bad surgery.

The mechanical principles made use of in the gradual reduction of these deformities, simulate those of a lever. The power is employed at the kyphosis, the resistance over the manubrium and symphysis. When the patient is placed in the best position for fixation, and held in the corrected position, a brace or jacket may be moulded to fit the back. This method is adopted in even the worst cases of deformity, because the eroded parts of the anterior surface of the articular surface of the vertebrae do not tend

to be healed by bone, but rather by fibrous tissue, consequently as the patient's weight increases the deformity tends to become more marked.

Hip.—Tuberculous disease of the hip-joint is one of the most serious forms of tuberculosis. The commonest deformities which follow it are flexion and adduction, both of which produce apparent shortening of the limb and lameness. Flexion as a symptom of tuberculous disease of the hip appears early, and should be guarded against, as the joint is apt to become fixed with the thigh in this position. Adduction appears later in the disease, and may give rise to serious inconvenience.

These deformities are not necessary sequelae to tuberculous disease of the hip. In the treatment of tuberculous disease of the hip, the appearance of these deformities should be anticipated and the hip and extremity kept at perfect rest in a position of abduction and extension. It has been customary to attempt to do this by rest in bed, with extension by weight and pulley and counter-extension. This method, however, does not immobilize but simply assures general rest, and relieves muscular spasm, consequently the application of a plaster of Paris spica, or Thomas hip-splint, is to be preferred. This treatment is especially efficacious if the patient is kept at general rest in bed.

When a patient is brought to our notice at a later stage of the disease, when either flexion or adduction, or both of these deformities have appeared already, active interference is necessitated.

In the past, extension with a weight and pulley in the line of the deformity and counter-extension have been the most commonly employed means of treatment in deformities seen early. Many, however, prefer to force the deformed limb into normal position under anaesthesia, and to retain the limb in the corrected position by a brace or plaster of Paris. This treatment should, however, be considered only with caution.

When all signs of active disease have disappeared, if deformity exist and the hip is fixed and manually immovable, a sub-trochanteric or trans-trochanteric osteotomy may be performed, after the method of either Gant or Robert Jones.

Knee.—Tuberculosis of the knee is a less serious affection than that at the hip. It is accompanied, however, by such similar symptoms as muscular spasm, which in the case of the knee also tends to produce deformity. This first is demonstrated by flexion, and, possibly, by external rotation. It is by contraction or spasm of the ham-strings, that flexion is produced. If this is persistent, posterior subluxation of the tibia is likely to follow, and with this shortening of the muscles, and possibly the ligaments.

In the earliest treatment of this lesion, flexion must be anticipated. It is unnecessary, and can be avoided. The muscular

spasm at the knee can always be controlled by plaster of Paris or a Thomas knee brace, and one or both of these used in conjunction with general treatment should be followed by cure of the disease.

In the later stages, when deformity already exists, its reduction must be considered.

The mode of reduction will depend absolutely on existing conditions. If the flexion is due simply to muscular spasm without structural change or subluxation, gradual reduction by extension and counter-extension on a double-inclined plane may be treatment of election, although many prefer the cautious reduction of the deformity under an anaesthetic, with the subsequent maintenance of the correction by the use of plaster of Paris or a splint.

Treatment at a later date must of necessity be operative. Shortening of the ham-strings requires division of their tendons, manually or by the knife. Shortening of ligaments may demand reduction by "brisement forcé." Subluxation requires reduction.

The earliest treatment, then, of a fixed deformity, should be a manual attempt at its reduction, made under an anaesthetic and without the exercise of too great force. This is best done after the method of Whitman. In this, the thigh is extended on a fixed leg while the patient is in the prone position. In this way the danger of producing a tibial subluxation is minimized. Here I may mention the genuelast, of which there are several varieties. This is an instrument for the forcible reduction of flexion at the knee. It is of distinct service in experienced hands, but the method of Whitman is usually sufficient in cases which do not require incision.

If the deformity is due to shortening of tissues, accompanied by firm fibrous or bony union, a supra-condylar osteotomy may rarely be considered, but usually the knee joint must be opened from in front and a wedge removed. This operation must be attempted with caution, often in two stages, as the popliteal vessels may be shortened in compensation to the deformed position and constriction and interference with the circulation or a rupture may be caused by a sudden reposition of the leg.

Ankle.—Tuberculosis of this joint is less serious than in either of the foregoing.

Deformity rarely follows. A fixed joint is common, but this is not disadvantageous if the foot is in fair position. If, however, this be not so, a supra-malleolar osteotomy may be considered as early advised by Trendelenberg.

Shoulder.—Tuberculosis of the shoulder is less common than a similar lesion of the hip or knee. Fixation of this joint commonly follows this lesion, but here scapular movement is usually sufficient to give a fairly useful member. In some cases one must consider excision or arthroplasty, which is the formation of a

new joint, and which was early performed by Mr. Thomas, of Liverpool, and has, of recent years, been described on this continent, perhaps most notably by Murphy, of Chicago, and Scudder, of Boston. The latter operation is, however, rarely necessary, excision only usually assuring a movable joint.

Elbow.—Results of proper treatment of this lesion are better than in any other joint. Fixation, of course, is a common sequence. If the joint is fixed in a position of usefulness, it is questionable whether it is wise to interfere with it. If, however, interference is considered advisable, the surgeon may attempt to force movement under anaesthesia, but this is a questionable procedure, and its advisability would require much thought. If interference is necessitated because of fixation in a position of more or less disadvantage, excision, or better, excision and arthroplasty, such as already described, may be performed.

Wrist.—Tuberculous disease of the wrist joint in childhood is very rare. In a series of 3105 cases of tuberculosis of the bones and joints treated at the Hospital for the Ruptured and Crippled, in but four was the wrist joint involved. In 43 cases in which the wrist was resected by Ollier, the youngest patient was thirteen. When deformity results, the hand is held in the flexed position.

Children suffering from acute tuberculosis of the wrist, may be treated on general principles, and, again, children suffering from flexion due to tuberculosis, may be treated on the principles already laid down, but in adults, treatment by excision yields the best results, although the method of Bier, combined with fixation, has, perhaps, been followed with more striking results in this than in the treatment of any other joint.

In discussing this affection it is well to mention that it has been noted that disease of the wrist joint in adults is very apt to be complicated with disease of the lungs.

If excision is attempted it must be remembered that the disease is rarely confined to the joint. If the disease is active, nothing but the most radical excision will avail.

Later in the course of the disease, when such deformities as flexion have resulted, we may undertake an excision simply to rectify a malposition, in which case the less we do the better. Straighten the hand by an incision through the joint, or above it, if possible. If the fingers are fixed by adherent tendons, the possibility of being able to free the tendons and restore movement in the fingers must be carefully studied.

DEFORMITIES DUE TO POSTURE.

Scoliosis or Lateral Curvature is the name applied to a condition in which any series of vertebral spinous processes show a constant deviation from the median line of the body, a deviation always accompanied by the element of twisting.

It is rarely recognized by the patient or his, or her, friends as a spinal deformity, but the patient is usually brought for advice because of an accompanying deformity, such as high shoulder or prominent hip.

Pain is rare in patients presenting deformity of moderate degree, although in severe cases it may be present, and in these shortness of breath is common. This shortness of breath is often due to pressure on vital organs through deformity of the thoracic cavity.

The spinal curve may be simple, or, more frequently, compound, *i.e.*, when there is a second or compensatory curve in a different direction. The curve may be designated as functional when transitory, or structural if fixed. The position of the vertebrae of the patient when suspended, will demonstrate the character of the curve. Structural curves are always accompanied by rotation. This is best demonstrated in extreme flexion.

The pathological changes ordinarily found in scoliosis are not the result of disease of the bone, but are modifications of form and structure due to abnormal pressure and strain resulting in accordance with Wolf's law, which is "every change in the form and function of the bones, or of their function alone, is followed by certain definite changes in their internal architecture, and equally definite secondary alterations of their external conformation in accordance with mathematical laws."

Scoliosis may be either congenital or acquired.

The acquired varieties may be divided according to Lovett into those due to—

- (1) Anatomical, physiological, or other asymmetries elsewhere than in the spine.
- (2) Pathological affections of the vertebrae.
- (3) Pathological affections of the bones and joints of the extremities.
- (4) Distorting conditions due to disease of the soft parts.
- (5) Habit or occupation.

In the acquired varieties it is well to differentiate between those due to pathological affections of the vertebrae and those which are symptomatic of an extra-vertebral affection or habit or occupation.

From the standpoint of treatment, the most important form of scoliosis due to a pathological affection of the vertebrae is that due to Pott's disease. Cases of lateral curvature accompanied by pain, especially if this is aggravated by motion, should be kept under observation until Pott's disease may be surely excluded, because in these, rest, not treatment, is required.

Treatment.—The aim of treatment in both the congenital and

the acquired forms of scoliosis is the substitution of a correct for a faulty attitude.

Treatment may best be divided into that of functional or transitory curves and that of structural or fixed curves.

(1) Functional curves are best treated by gymnastic exercises. Such exercises are employed in the treatment of both forms of scoliosis, firstly, to loosen up the curved portions of the spinal column, where such is necessary, and thus to make possible the attainment of an improved position; and, secondly, to aid in retaining the improved position by increasing the strength of certain groups of muscles as well as the general tone of the muscular system.

(2) Structural curves. While functional curves are best treated by gymnastic exercises, it is unreasonable to expect gymnastic exercises to straighten marked or severe curves due to change in the shape of the vertebrae, but such exercises will render pliable a more or less rigid spine preparatory to instrumental correction, or when more efficient measures have been employed, gymnastic exercises will tend to make permanent the gain secured by other measures.

For the reduction of structural curves, then, more dependence is to be placed on instrumental reduction, followed by the maintenance of such reduction by the use of plaster of Paris.

Correction is brought about by pressure on the spine when the patient is placed in the flexed position. Pressure is used to correct, first, the lateral deviation, and, secondly, the rotation. It is useless to attempt to correct the lateral deviation alone. If we attempt this, we increase the rotation. Further, it is useless to attempt to correct the rotation alone. If we do this, we increase the lateral deviation.

Let me repeat: Severe cases are best treated by forcible correction, preceded by gymnastic exercises, or any other method of stretching and rendering lax the ligaments and soft parts. The forcible correction must relieve both the lateral curvature and the rotation. The correction must be maintained by fixation in plaster of Paris.

The theory of the permanency of any such correction is based on Wolf's law, just as was the theory of the structural deformity.

The Weak or Flat Foot.—The most common deformity seen by the orthopaedic surgeon is the weak or flat foot.

Whitman has said that the function of the foot is to bear the weight of the body and to serve as a lever for its work.

"When the foot ceases to act as a lever it loses the support and control of the muscles which have balanced the weight in its proper relation to it, and the attitude of passive support must be assumed, in which the burden falls upon the inner side and the

strain upon the ligaments. Whether this attitude is voluntarily assumed, or whether it is forced upon the foot, the disuse of function and the mechanical disadvantages to which the foot is subjected, predispose to weakness and deformity."

Further, the same observer has said that flat foot when fully developed is practically a dislocation, in which the astragalus has slipped downwards and inwards from the remainder of the foot to which the muscles are attached.

Flat foot is simply a further development of weak foot, and this is simply an exaggeration of a normal attitude.

The term "pronated foot" is used to describe a foot rotated at the calcaneo-astragaloid joint. It is really an early stage of flat foot; that is, while there is yet no actual dislocation of the astragalus, this bone may, and probably does, bear an abnormal relationship to the other tarsal bones.

The symptoms of this condition are a sagging of the internal malleolus and a seeming adduction of the whole foot. The sagging of the malleolus is due to a rotation of the whole leg on the foot. The arch is not apparently affected in a purely pronated foot. This variety is never rigid. The term valgus is used to denote a foot in which, in addition to abduction of the foot, a lowering of the arch and prominence about the position of the scaphoid is seen. This variety is often rigid.

Nearly all orthopaedic surgeons have contributed to the literature of the subject of the weak and flat foot. Amongst the most important of these contributions are those of Lorenz, Hoffa, Ellis, and Whitman.

As the space at my disposal is limited, I shall confine my attention to the most practical consideration of the subject of the weak or flat foot, that is, its treatment. This, to my mind, can be best considered by adopting what is really the classification of Osgood, of Boston, and considering the treatment advisable in each class.

Hoffa concluded in his study of the affections of the foot that of the acquired forms of flat foot, nearly 90 per cent. may be described, because of their method of origin, as of the static variety, consequently, our attention may be most profitably devoted to this variety alone. This, the so-called static variety, may primarily be divided into two classes (1) the flexible, and (2) the rigid. These will now be considered separately.

(1) *The Flexible Variety*.—In the majority of cases, this class represents simply an over-strain. This strain is accompanied by little or no muscular spasm.

This class may be subdivided into (a) simple weak, and (b) pronated feet.

(a) *Simple Weak or Relaxed Feet*.—Here the longitudinal arch without weight-bearing is normal for the individual, and here pronation is slight. Pain, perhaps referred to the calves, and discomfort are the chief symptoms. They are usually easily corrected and never need operative treatment. Here the patient should be taught to walk in such a way that his feet are spared all strain. His attention should be drawn to the leverage action of the foot, and exercises should be prescribed to strengthen especially the tibiales, as the most important muscular supports to the arch.

The patient should be directed to wear boots that are made to fit his feet, and which should be heavily soled and have a low, flat heel.

No brace is necessary or advisable, but the arch may be supported for a time by strapping with adhesive plaster, as suggested by Whitman.

(b) *Pronated Feet*.—Here pronation (shown by an apparent sagging of the internal malleolus and an eversion of the foot, which brings the line of weight-bearing too far to the inner side) is the essential feature. The longitudinal arch is depressed, principally on weight-bearing.

Exercises are the most important factors in the treatment of these cases, although the above treatment also should be prescribed. In addition to this, a Thomas heel should be suggested, or perhaps a temporary brace of celluloid or of spring steel of 21 to 26 gauge is employed. A rigid brace is not advised.

(c) *The Pronated Valgus Foot*.—In this class the longitudinal arch is depressed both with and without weight-bearing. The arch may be tender to plantar pressure, and here, also, eversion is most marked.

The rigid support is nearly always necessary in these cases to prop up and support the relaxed arch. This should gradually be raised until the normal is reached, when it may be substituted by a spring brace, which should be used during those times when the feet are subjected to but little weight-bearing, the rigid brace being retained at other times. The treatment suggested in (a) should also be maintained, and it is advisable to seek some correction and relief of pain and tenderness before employing the brace by the use of manipulation and strapping with adhesive plaster.

(2) *Rigid Feet*.—In studying this condition, we must first discover the cause of the rigidity. Let us ascertain whether it is due to muscular spasm, muscular contracture or adhesion. Often it may be necessary to employ an anesthetic to find out. When rigid through muscular spasm, although the deformity be corrected, the spasm tends to recur. This muscular spasm is probably due to reflex action. The types of rigid feet may best be named: (a) the

peroneal type, (b) the contracted muscular type, (c) the fibrous adhesive type, (d) the bony adhesive type.

(a) *The Peroneal Type*.—Here the foot is rigid through spasm of the muscles, and especially of the peronei. These, on attempted inversion of the foot, stand out in a position of extreme tension. The arch is often quite high. There is less likely to be disturbance of the circulation in this than in the other forms of rigid valgus. There is usually marked pronation. The scaphoid is rarely unduly prominent. The peroneal spasm is, as has already been inferred, probably of reflex origin. Under an anaesthetic it disappears, although the peronei may be congenitally or relatively normally shortened, this condition being demonstrated by muscular spasm. In this class probably belong most of those patients who have in the past resisted all forms of treatment. All surgeons who have been interested in valgus have experienced failures in the treatment of certain patients. Perhaps a brace has been used with results detrimental to the surgeon's reputation. Possibly the deformity has been corrected under an anaesthetic and placed in plaster of Paris in a position most satisfactory to the operator, and yet a recurrence has followed.

The treatment of this condition is peroneal resection, although this, to my mind, cannot be defended on theoretical grounds, practically it seems to be the only efficacious measure in some cases. This type has been studied principally by Mr. Robert Jones, of Liverpool, and in his hands the resection of three-quarters to one inch of the tendons of both peroneals with the destruction of their sheath at the place of resection, has been followed by most satisfactory results.

(b) *The Contracted Muscle Type* and (c) *the Fibrous Adhesive Forms* may be considered together except as to treatment. In the first type tenotomies are necessitated. Division even of the tendo-achilles being performed in some cases to assure proper correction, whereas in the second type wrenching is usually all that is required primarily.

In these there is inability to invert at the mediotarsal joint. The arch is usually low. There are usually signs of passive congestion, and there may be oedema. Flexion and extension are free. Attempts to passively invert are followed by pain and resistance. The latter may usually be overcome and the foot over-corrected by tiring out the muscles which are spasmodically contracted. If this is impossible, even under an anaesthetic, the adhesions must be more forcibly broken down by manual manipulations or by the use of the Thomas wrench, and the patient's foot put up in a position of extreme inversion in plaster of Paris. Osgood has suggested that the plaster is best removed in twenty-four to forty-eight hours. The foot at first gently, and later vigorously, manipulated,

and then returned into its plaster splint. Within a week active exercises may be begun. Massage is most useful in such cases. In the past, it has been the custom to leave the plaster of Paris intact for some weeks, but surgeons now have more generally adopted massage as a curative agent of prime importance in many of even the acutest lesions, such as fractures, ligamentous ruptures, and inflammatory exudations.

The secondary treatment indicated is the application of a well-fitting rigid brace of the class suggested by Whitman, of New York, and made from a cast taken of the foot early after correction. This must be used for some time in conjunction with the treatment suggested for simple weak feet.

(d) *Bony Adhesive Type*.—The diagnosis in these cases is made by the history of a long-standing deformity which is more or less irreducible even by wrenching under anaesthesia. In the hands of Painter,* of Boston, excision of the scaphoid has been followed by excellent results in such cases.

The routine treatment suggested is an attempt under an anaesthetic, to manually or instrumentally better the position; failing in which the scaphoid may be excised with the object of decreasing the length of the inner border of the foot. This excision is to be followed by wrenching with the Thomas wrench. The feet are then kept in the position of extreme correction in plaster of Paris for at least six weeks; subsequently a rigid foot brace is employed in conjunction with routine methods for strengthening the feet.

In conclusion, I would say that pain should be our indication for operative interference. Absolute sinking of the arch without pain rarely calls for interference.

DEFORMITIES DUE TO THE PARALYSES.

We shall consider here only the most common forms of paralyses and the deformities resulting.

Brachial, Birth or Obstetrical Paralysis.—Perhaps the most frequent cause is traction, which may stretch or rupture a part or parts of the brachial plexus. The fifth and sixth nerves are the most frequently affected, but the whole plexus may be involved.

The whole arm of the affected side is held in a characteristic attitude. There is internal rotation and adduction of the arm and forearm, extension of the forearm on the arm, and the hanging of the arm due to inability to raise the shoulder. There is commonly a paralysis of the deltoid and supra-spinatus; the biceps, brachialis anticus, supinator longus, and the supinator brevis.

The unopposed action, then, of the following muscles is responsible for the following deformities: The unopposed action of the

* Vide *Boston Medical Journal and Surgical Journal*, August, 1905.

pectoralis major causes abduction. The unopposed subscapular causes internal rotation, which, however, is also due to the action of both the latissimus dorsi and the teres major. Paralysis of the supinator brevis and biceps allows of pronation. The extension of the forearm is due to weakness or paralysis of the flexors, such as the biceps and brachialis anticus.

Treatment is altogether unsatisfactory. Certain of the milder cases seem to improve greatly themselves. Some improvement can be hoped for in nearly every case during at least the first twelve months of life, even without treatment.

Active treatment may be divided into (1) Treatment by electricity and massage, (2) Muscle shortening, as suggested by Mr. Robert Jones, and (3) Operative procedures.

Palliative treatment, as suggested (numbers 1 and 2), may be persisted in for some time, but the study of these paralyses by Doctors Clark, Taylor, and Prout, suggests that a period of one year is sufficient to test the permanency of the lesion, after which time the question of operative interference suggests itself. Operation here is theoretically advisable. The excision of the permanently injured parts of the brachial plexus, with the suturing of the cut ends, is rational, but I have not been able to convince myself, either by an examination of the cases presented by Dr. Taylor, or by the results reported, of the practical advantage to be derived from interference, although strong measures would seem to be justifiable in dealing with so grave a lesion.

Cerebral or Spastic Paralyses may be considered under three headings—Hemiplegia, Paraplegia, and Diplegia.

Hemiplegia, *i.e.*, a paralysis of one leg and one arm, is usually an acquired deformity, although in childhood it is usually acquired before the first year. Rupture of a cerebral vessel during a convulsion is, probably, the most frequent cause. Paraplegia, *i.e.*, the paralysis of both lower extremities, and diplegia, where we see a paralysis of both legs and arms, are usually congenital conditions, and are most frequently due to the use of instruments or to a difficult labour. These deformities are most frequently accompanied by disordered cerebration.

Treatment.—Much can be done in the milder forms, and, indeed, in some of the gravest, by tenotomies of contracted tendons and myotomies. I know of few classes of patients where the surgeon can get more satisfactory results in even bad cases when the patient may have extreme equinus, scissor gait through adductor spasm, flexion at the knees, even accompanied by defective cerebration. The majority of these patients can, by operative procedures and by tenotomies, be enabled to walk, and the ability to walk seems to give new confidence to the little patient, and the change

of scene made possible by the new abilities, sharpens and improves his or her intelligence.

Transplantations also are of service. In the case of extreme pronation of the forearm, the conversion of the pronator radii teres into a supinator is often of benefit. Flexion of the hand can be combated by the method of muscle shortening, suggested by Mr. Robert Jones.

Anterior Polio Myelitis.—The etiology of this affection is still obscure. Many regard it as of bacterial origin. The pathological findings show that the lesions are probably dependent on an acute inflammation, causing a secondary destruction of nerve cells of the anterior cornua. The paralyses in this condition are of the flaccid variety. The distribution of the paralyses follows no rule. The lower extremities are most frequently affected. The paralysis may affect the body. When such paralysis occurs the muscles of the back are the most frequently affected. The muscles of the lower extremity are usually stated to be involved in the following order of frequency: (1) The peronei; (2) the extensors of the toes; (3) the quadriceps; (4) the tibiales. In the arm the muscles most frequently attacked are the deltoid and the shoulder group.

The treatment of the deformities resulting from this affection may be thus classified: (1) Education; (2) Tenotomy; (3) Tendon transplantation; (4) Arthrodesis; (5) Nerve transplantation.

When a sufficient length of time has elapsed to warrant the belief that no further regeneration can be expected, active treatment may be considered.

It is surprising how much can be done in the early stages by educating the patient to use the muscles which are not wholly paralyzed, and, in the case of deformity, to use the muscles affected by a pseudo-paralysis. Tenotomy should rarely be required if treatment, preventative and curative, has been persisted in during the early stage. This procedure is often required, however, for deforming contractures of a later date of origin.

The most common deformities resulting from this affection are of the foot, viz.; Talipes equinus, due to paralyses of the extensors; talipes calcaneus, due to paralyses of the calf muscles; talipes varus, due to paralyses of the peronei; talipes valgus, due to paralyses of the tibiales.

In the treatment of any of these deformities, the first consideration must always be whether the condition is a fixed deformity, *i.e.*, whether the deformity is the result of persistent malposition acting on the bony structures and deforming them, or whether the deformity is the result of a stretching, a contraction, or a stretching and a contraction of any group of muscles or opposing groups of muscles. In the first class of cases, it is doubtful

whether any operation or means of treatment, which falls short of osteotomy or arthrodesis, will suffice, but in the second group it is quite frequently unnecessary to do more than tenotomize or transplant or, perhaps, combine the two procedures.

Paralyses of the muscles controlling the knee joint are dealt with more especially by transplantations and tendon lengthening. The transplantation of the sartorius and even the flexors of the knee have been made possible by such methods as lengthening by silk strands, as suggested by Lange. It is well to mention here, however, that tendon transplantation quite frequently acts more especially by changing what was a power for positive evil into a power for negative good.

In paralyses of muscles about the hip joint, the frequent escape of the psoas and iliacus has often been commented upon. That these should frequently escape is fortunate, because, if these muscles alone retain their function, it seems possible to assure some means of voluntary locomotion in the majority of cases.

Many of the deformities resulting from paralyses of the muscles of the upper extremity can be improved by Thomas' method of muscle-shortening. For others, tendon transplantation is indicated. In others, muscle transplantation has been successful.

Before leaving the subject of the deformities resulting from anterior poliomyelitis, let me say that, within the past twenty years we have witnessed the dawn of hope for those afflicted by these deformities. It is surprising how much can be done for even those who are apparently the most hopeless cripples.

DEFORMITIES DUE TO RICKETS.

Rickets is a constitutional disease due to improper hygiene and feeding. It usually begins between the ages of six and eighteen months. It is accompanied by general manifestations, but the most marked and characteristic changes are found in the bones; these consist in a diminution of the earthy substances and in overgrowth of osteoid tissue.

Erichsen says, that the essential features of the morbid processes are, first, an exaggeration of the processes immediately preparatory to the development of true bone; secondly, an imperfect conversion of the preparatory tissue into true bone; and, thirdly, a great irregularity of the whole process.

The deformities for which the orthopaedic surgeon is most frequently consulted are those of the lower extremities and spine.

Treatment.—General treatment, such as hygiene and a proper diet, are most important during the acute stages of this disease.

Deformities of the Spine.—The most common deformities of the spine, due to rickets, are kyphosis and scoliosis.

The kyphosis of rickets must be differentiated from that of Pott's disease. This is done by the fact that the kyphosis in rickets is but one manifestation of a general disease. Muscular spasm is not so marked in a rhachitic deformity, and fixation is rarely present.

Early kyphosis is best treated by recumbency on a Bradford frame, or one of its modifications. Later cases may be treated much as is done in Pott's disease.

Scoliosis due to rickets is often severe. Mild, early cases may be treated as the early cases of kyphosis, but the later cases seem to be especially suitable for forcible reduction with retention in the position of correction.

Deformities of the Extremities.—The surgeon is rarely called upon to treat patients suffering from rhachitic deformities of the upper extremities, but is quite commonly called upon to do so in deformities of the lower extremities.

The deformities for which the patient is most commonly brought to the surgeon are knock-knees, bow-legs, and anterior curvature of the tibia.

Early cases of both knock-knee and bow-legs are best treated by braces, but it is useless to attempt the reduction of such deformities by these measures in the later manifestations of this disease.

It has been arbitrarily said, that braces should not be prescribed after the child attains the fourth year. This may be taken as a rough rule of procedure, but there are other indications of the uselessness of non-operative treatment besides age, such as the stage of the disease causing the deformity, the repair that nature has attempted and the hardness of the bone at fault must be considered.

The Operative Treatment.

Knock-knee.—The operative treatment of knock-knee is now to be considered. Several methods have been used, but, from our point of view, osteotomy alone should be considered. At the hospital for the Ruptured and Crippled the femur is incised with a chisel about one and half inches from the external condyle, and there bent into normal position manually. In Liverpool, Mr. Robert Jones saws through the femur at about the same position.

Both operative procedures are equally efficacious. After osteotomy, the American surgeon usually employs plaster of Paris—the English surgeon splints. Plaster of Paris is to be preferred under some conditions and splints under more favorable conditions.

Bow Legs.—The operations devised for the relief of bow-legs, can, for our purposes, be divided into osteotomies and osteoclases.

Osteotomies are frequently performed. Such is done with a chisel or osteotome through the tibia at the centre of the curvature. The fibula is then bent with the leg into normal shape, or is broken. In young children manual osteoclasis is sufficient. In those a little older, osteoclasis by bending or producing a green-stick-fracture over a wedge is better, and in the oldest an osteoclast may be necessary for those who prefer the so-called bloodless surgery. Of osteoclasts many may be described, but, perhaps, the simplest is that of Thomas, although that of Grattan is perhaps the most powerful.

In deciding upon what particular form of treatment should be employed in the treatment of a patient suffering from bow-legs, the position of the bowing must be considered, as well as the age of the patient and the primary cause and its duration. It is unwise to treat all patients with braces, by open incision and the chisel, or by osteoclasis.

Anterior Curvature of the Tibia.—In the early cases, braces are of only doubtful benefit, and in the later cases operative procedures alone offer relief.

If the deformity is progressive the tendo-achilles should be carefully examined with a view to lengthening it if it is felt that it is an etiological factor in the retention of the deformity. The operative treatment of marked deformities following the active stage of rickets is less favored in England than among American orthopaedists, and should only be undertaken if especially indicated. I have seen good results follow the removal of a wedge from the tibia, and, in some cases, a lateral osteotomy alone may suffice.

ON THE CHOICE OF A CLIMATE.*

BY GEORGE D. PORTER, M.B., TORONTO.

ALTHOUGH Oliver Goldsmith was more famous as a poet than as a physician, yet one can find nothing written elsewhere so suggestive upon the choice of a climate as are his familiar lines:

“But where to find that happiest spot below,
Who can direct when all pretend to know?
The shuddering tenant of the frigid zone,
Boldly proclaims that happiest spot his own,
Extols the treasures of his stormy seas,
And his long nights of revelry and ease;
The naked negro, panting at the line,
Boasts of his golden sands and palmy wine,
Basks in the glare, or stems the tepid wave,
And thanks his gods for all the good they gave.
Such is the patriot’s boast, where’er we roam,
His first, best country ever is at home.”

The virtues of many health resorts, as represented in their alluring literature, are so unlike the places themselves that one is led to believe that these glowing accounts are due to the “patriot’s boast,” aided, possibly, by a most natural desire for an influx of visitors and their helpful coin; but even when the spot is as beautiful as pictured, the fact remains that too often for the health-seeker “the country blooms a garden and a grave.”

When the enquirer turns, on the other hand, to the scientific works on climatology for more accurate information, he is too often discouraged in his search by the bewildering array of meteorological statistics which fill their pages, for these figures relating to the mean annual temperature, mean annual rainfall, the number of cloudy days per annum, and the direction and velocity of the winds, can convey nothing to the general reader who is unacquainted with the corresponding statistics of his own locality, with which he is supposed to compare them.

When we speak of the weather we refer in general terms to the temperature, the humidity, the motion and the purity of the atmosphere, and the climate of a place may be called its condition in relation to these during the course of a long period of time. Without discussing the various factors which affect the climate, such as latitude, altitude, distance from the ocean and other large bodies of

* Read at a meeting of the Canadian Medical Association, Ottawa, June, 1903.

water, it is well to remember that no one of these factors alone is sufficient to account for the climate of a place. If such were true we should not see fur coats being worn in Ottawa at the same time of the year that rubber ones were being worn in Vancouver (a city which is farther north than the Capital). The presence of mountains, the quality of the soil, vegetation, and large centres of population all have an effect upon the climate. We "can anticipate, however, from the geographical position and natural features of a place what its climate is likely to be by comparing it with some other relative place whose climate is already known."

Although there are practically no perfect climates for the invalid all the year round anywhere, yet "a good climate is one characterized by frequent moderate variations in the temperature," for such variations stimulate the vital functions and increase the resistance to disease. As we have a variable climate in many parts of Canada, one may well ask, Why not remain at home? For the healthy, and for those invalids who are able to respond to the increased demand for heat production during the winter months, there are probably no better climates, but for those whose vitality is too low to withstand "the marked weather changes within short periods," which we so often experience, a temporary change at least is sometimes desirable. Then again, there are but few inducements during the cold weather for a patient to remain out-of-doors, and his desire for fresh air and out-of-door life ought to be stimulated by outside attractions rather than by lectures on hygiene. The convalescent, too, and the neurasthenic find it very difficult to avoid worrying over the state of their business as well as the state of their health while they are in the vicinity of the one and among friends who, through mistaken kindness, are constantly enquiring about the other.

"If it be a good thing, however, for a sick man to change his residence, it must be a proper thing for him to know what it is that he is avoiding and what it is that he is to acquire," says Scoresby Jackson, and when such is done it will be found that very often one can alter his environment without changing his location, and that if he will properly utilize his own climate he may recover his health without leaving home. If he will give up the strenuous city life, with its late hours, crowded cars, ill-ventilated public buildings, (and private ones, too), live as much as possible out-of-doors, and take proper care of himself, he will receive a large share of the benefits which a change of climate would otherwise have given him. Many a man blames the rise and fall of the thermometer for his failing health, when the rise and fall of the stock market have had far more to do with it. Most of us know of some invalid who has gone to Colorado, changed his mode of life, and recovered his health, and then attributed it all to the climate, when he might have

been cured much easier and at less expense by hieing himself to the pure air and the simple life of the country in his own neighborhood.

If one intends to go away, however, it is a great mistake putting off the journey until the patient is too ill to properly undertake it. One should also have some knowledge of the place to which he is going, of the treatment to which he will be subjected while there, particulars as to accommodations and rates, and also, if possible, a letter to some reputable physician in the place, whom he can consult; for, after all, it matters little to the health of our patient how high a resort may be above the level of the sea, how many sunshiny days it may have, and how little rainfall, if he is unable to procure good, nourishing food, pure water, suitable accommodation and proper care. Then, in choosing a climate, we must consider our patient as well as his disease, his temperament as well as his temperature, his purse as well as his pulse; ascertain whether he will have to seek employment or whether he has means of support, and also whether he intends to remain away permanently or purposes to return.

The various health resorts (or regions which are generally known as such) may be classified under the heads of Coast, Inland and Mountainous Inland Climates. The warm coast climates (including small islands and marine) are, as a rule, equable and have a considerable moisture, and they might be described in one word as sedative climates. Such are to be found in the West Indies (Cuba, Jamaica and Porto Rico), the Bahamas (Nassau), Florida (St. Augustine, Daytona, Palm Beach and Miama, etc., on the East coast, and Tampa on the West coast), the Bermudas, Canary and Madeira Islands, Southern Italy, Algiers and Sicily. These are comfortable winter climates for delicate old people, and are of benefit in cases of tardy convalescence, neurasthenia, and chronic bronchitis. In advanced phthisis, diabetes, and also in many cases of heart disease, a winter spent in such climates will soothe the patients and protect them from the trying cold at home. The disadvantage of a residence in them is the tendency to digestive disturbances, especially if one is not careful to avoid the heavy items on the menus so often provided at the hotels. Then there is a noticeable loss of vigor (especially in the more robust patients) if they remain there too long. (The mistake must not be made, however, of returning home before the mild weather sets in, and, although we often have a mild April in Ontario and in Quebec, yet it is only mild as compared to the passing winter, and for the delicate person who has spent the winter months in the warm South the latter part of May is quite early enough for his return. The patient would do well also to break the journey by stopping off at one or two of the resorts on his way North. These warm climates are not to be advised for children, as they are too enervating for them, and the difficulty of obtaining fresh milk is a drawback.

Naturally, everyone has his or her own preference for some particular locality, but, without attempting to describe the attractions of the various regions, it may not be amiss to point out that of all those mentioned Florida is the nearest home, the best equipped with hotels and boarding houses, and these things make up in some degree for its lack of scenery and mental diversions which are to be had in some of the other places. If the weather should turn cool there (as it does at times even in Florida), one can cross over to Nassau in a few hours, where he can find a climate that for equability is unsurpassed.

The moderately warm coast climates, such as we have in the Southern coast of California (Los Angeles, Pasadena, Coronado Beach and Santa Barbara); also the Atlantic coast of Georgia and Carolina (Savannah, Charleston, Summerville, and Thomasville, a little farther inland); and in the French and Italian Riviera (Nice, Cannes, Mentone, Bordighera, San Remo, etc.), are not so relaxing as the warm coast resorts, and are much better suited for children and also for the more robust type of patients. Of these three regions, California has the advantage of a variety of elevation within a small compass, allowing of an all-year-round residence. The Atlantic coast resorts are much nearer home, and are, therefore, more suitable for a short stay. The Riviera, which is a stretch of beautiful coast line from two to four miles in width, running along the north shore of the Mediterranean from Toulon to Genoa, and protected on the north by mountains from two to three thousand feet high, has more variety of accommodation and at more reasonable rates than have the American resorts, and it also offers much more in the way of mental diversion. Its disadvantages (for there are those to every place) are the dust, the occasional strong winds and the sudden drop in temperature at sundown. This last is a source of danger to invalids, for, unless they are provided with suitable wraps, especially when driving, they are very liable to take a chill, ending frequently in an attack of enterocolitis. (There is no place in either Europe or in America where an overcoat is not needed at some time of the year, though this is not true in the islands already mentioned, and if one can accustom himself to the wearing of light woollen undergarments he will soon find that there is nothing so safe and comfortable, which can be worn all the year round everywhere. Many of the houses in the South are damp and cold, while many in the North are much too warm, and these differences between inside and outside temperatures are alone sufficient reason for the wearing of woollens, and if one tries to keep pace with the fluctuations of the thermometer by changing from woollens to cottons, and from them back again every time the erratic mercury goes up or goes down, he will always be in danger and in doubt, but if he will change only his outer garments accord-

ing to the weather he will save himself from a lot of trouble and worry, as well as from a number of otherwise inevitable colds.)

The mild coast climates, such as we have in the south of England (Brighton, Bournemouth, Torquay, etc.); along the Atlantic seaboard of America from Carolina to Atlantic City, and in British Columbia (Victoria and Vancouver), are all much cooler than the moderately warm coast climates, but, in spite of that, they might be classed as sedative climates. Of these, the Atlantic resorts have for us the advantage of being very much nearer home than the others, but they are unprotected from the winds. The Pacific resorts, though milder than the Atlantic ones, offer as yet but little inducement in the way of accommodations for the invalid, and they are expensive, while the English resorts have a great variety of accommodation at comparatively moderate cost, and, besides that, there are in many of them some natural protection from the cold north winds.

The cool coast climates, such as we have in Nova Scotia and Prince Edward Island, need not be mentioned here, as they are chosen for invalids only in the summer months, and no Canadian need leave his own country from May until November for more healthful and delightful climates.

The inland climates of moderate elevation (from 2,000 feet to 3,500 feet), such as we have in the plateau country of Texas, Arizona and New Mexico, and also in the foothills of Southern Alberta (Calgary, 3,500 feet), have a dry atmosphere, with a good deal of sunshine and moderately variable temperature. They are invigorating climates and tend to promote metabolism. Such are good places for tuberculous patients who are sufficiently robust to take exercise, but for the delicate patients who need care and attention they are not suitable. Besides their lack of good accommodations, a great objection to them is the frequent strong winds, with the dust, which is one of the drawbacks to nearly all dry climates.

The Okanagan Valley, in British Columbia (Vernon, 1,200 feet, and Summerland), is growing in favor as a health region. It has a mild, dry climate, well-drained soil, and its beautiful scenery, together with the opportunity it offers for fruit-growing, make it a very desirable place for those patients not vigorous enough to withstand the rougher life and stronger climate on the foothills. Kamloops (1,100 feet) also has much the same climate as that of Vernon.

The Carolinas (Pinehurst, Southern Pines, Camden and Aiken, in the sandy belt, and Ashville (2,300 feet) and Toxaway, in the higher regions), have a moderately dry, moderately variable climate and plenty of good accommodation for the invalid. The higher resorts have more beautiful scenery, but are damper than those in the sandy belt.

In connection with the inland climates, it will not be necessary to mention the spas of Germany, France, etc., for they offer no climatic advantages over places found nearer home. Many of them are justly famous, however, as are those in different parts of the United States and Canada, for the special forms of treatment which one may obtain there, or for the baths or mineral springs in their vicinity. Egypt, too, is a great way off, expensive, and subject to occasional severe dust storms, and will not be considered here.)

Although the Highlands of Ontario (1,000 feet), Muskoka, Lake of Bays, Temagami, Georgian Bay, etc., are noted only as summer resorts, the fact that the sanitarium for consumptives in Gravenhurst, which is open all the year around, is having such splendid results shows that the winter climate here is not deleterious to this class of patients at any rate, and the time may not be far distant when our winter climate will be utilized for tuberculous patients as much as the very similar climates in Switzerland now are.

The air in these regions is very pure, moderately dry, variable, and the rocky soil allows of very quick drainage. They are in summer suitable for anaemic patients, asthmatics, and practically all pulmonary complaints, while hay fever patients find immunity from attacks while there. Good accommodations, from the high-class Royal Muskoka Hotel down to the plain but wholesome farmhouse fare, are to be had.

The climate of the Laurentian Hills, and also of the Adirondacks, is very similar to that of these regions.

The Mountainous Climates of America are confined practically to regions along the Rockies, while those best known in Europe are in the Alps. They have cold, dry, still and very pure atmospheres, with a low barometric pressure. Such climates might be called stimulating. The effect of living in these high altitudes (4,500 feet and over) is to increase one's appetite, and the tissues seem to acquire an increased resistance to the action of micro-organisms. The patient gains in weight, and there is an expansion in lung capacity. Sleeplessness, however, is very common in such altitudes, and nervous patients, especially if they take too much exercise, do not do well there. Palpitation of the heart and difficulty of breathing affect others. "Strong constitutions, as a rule, bear mountain climates well, but feeble ones, who are defective in tissue change and in the production of heat, require warm climates, with shelter from the winds." Early cases of tuberculosis do well in high altitudes, even when there have been slight haemorrhages, but cases complicated with heart lesions or nephritis do not. A relapse is not infrequent with those who have improved in mountainous climates when they return to the sea level, and, therefore, a permanent residence in the higher altitudes ought to be considered before sending one there.

Davos-Platz (a valley ten miles long, at an elevation of from 4,500 feet to 5,400 feet), situated in the Alps, is one of the best known of the Swiss mountain resorts. It offers the advantage of protection from the winds, lacking in most mountainous regions.

Banff (4,500 feet) is practically the only Canadian mountain resort with first-class hotel and sanitarium accommodation.

Colorado (Denver, 5,300 feet; Colorado Springs, 6,000 feet) has a delightful mountain climate, and also plenty of accommodation. There is here a chance for a patient, able to do light work, to find employment or to practise his profession, as the case may be, making it, therefore, a desirable mountainous region for permanent residence.

Mexico City (7,400 feet) is a beautiful place, with a glorious mountain climate. It is also a very cheap place to live in, but, owing to the population being composed for the most part of Mexican and Spanish, many would not choose it for a place of permanent residence. Then the food one usually gets there is not appetizing, and its great distance from home is a serious drawback.

In summing up, it is safe to say that, "although one cannot recommend a particular climate for a particular disease," yet a man with Bright's disease would do best in a warm, dry, inland climate protected from winds; catarrhal and rheumatic patients would do best in dry climates where there is not too much variability of temperature. Patients with heart disease, advanced phthisis, chronic bronchitis, diabetes or neurasthenia, might safely choose, at least for the winter, a sedative coast climate. A temporary residence there also helps tide over the severe winter months for delicate old people and children, while convalescents often recuperate in those regions more quickly than they would at home.

Most cases of tuberculosis do best in the invigorating inland climates. Early cases of tuberculosis also do well in the stimulating mountain resorts. "If safety lies in a middle course," advises Solly, "when in doubt, choose the Inland climates rather than the Coast or Mountainous ones."

Of the various regions mentioned, it may be said in a general sort of way that the western part of America offers a great variety of elevation within a short distance, allowing of an all-year-round residence, and it also offers probably more chances of a man's earning his living than the eastern resorts do. The latter, however, have the advantage of being much nearer home, and also of affording better accommodations. The European resorts offer more inducements in the way of mental diversions than do the American ones, and they also have the best accommodations at the most reasonable rates. Remember that "far-off hills are always green," and before choosing some place a long way off recall the advantages of those which are nearer home. Also advise your patient to settle

down in some one place rather than to keep travelling from one to another.

For the strong and healthy travel is a recreation and a delight; it refreshes the jaded man and takes his mind from off his cares, but for the sick it is altogether a different matter. The frequent change of food and water, the fatigue of travel, the infected sleeping cars (especially those in the South) are all sources of danger. The lot of the "Weather-Chaser," as the travelling invalid is called, is not always a happy one, and Robert Louis Stevenson, who himself came under this class, well expressed it when he said: "Our taste for the beauties of nature is essentially capricious, and especially is this so with invalids, who, after the excitement of the journey is over, gradually become disenchanted; then comes the worst of all sickness—the longing for home."

Gentlemen, a man with wealth may buy his way; a man with health may earn it, but the man without either, who will have to be dependent upon the attentions and the good-will of strangers, would do well not to travel too far, and from my observations of a large number of health resorts on both continents I am convinced of the truth of that old adage that—for the sick man, the man who needs the care of friends and a physician—"East, West, home's best."

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Selected Articles.

RUDYARD KIPLING'S SPEECH TO THE GRADUATES AT MIDDLESEX HOSPITAL, LONDON.

"*Gentlemen*,—It may not have escaped your professional observation that there are only two classes of mankind in the world—doctors and patients. I have had some delicacy in confessing that I have belonged to the patient class ever since a doctor told me that all patients were phenomenal liars where their own symptoms were concerned. (Laughter.) If I dared to take advantage of this magnificent opportunity which is now before me I should like to talk to you all about my own symptoms. However, I have been ordered—on medical advice—not to talk about patients, but doctors. Speaking, then, as a patient, I should say that the average patient looks upon the average doctor very much as the non-combatant looks upon the troops fighting on his behalf. The more trained men there are between his body and the enemy, he thinks, the better. (Laughter)."

FIGHT AGAINST DEATH.

"I have had the good fortune this afternoon of meeting a number of trained men who, in due time, will be drafted into your permanently mobilized army, which is always in action, always under fire against death. Of course, it is a little unfortunate that Death, as the senior practitioner, is bound to win in the long run, but we non-combatants, we patients, console ourselves with the idea that it will be your business to make the best terms you can with Death on our behalf; to see how his attacks can be longest delayed or diverted, and, when he insists on driving the attack home, to see that he does it according to the rules of civilized warfare. Every sane human being is agreed that this long-drawn fight for time that we call life is one of the most important things in the world. It follows, therefore, that you, who control and oversee this fight, and who will reinforce it, must be amongst the most important people in the world. (Laughter.)"

NO WORKING HOURS.

"It was long ago decided that you have no working hours that anybody is bound to respect, and nothing except your extreme bodily illness will excuse you in his eyes from refusing to help a

man who thinks he may need your help at any hour of the day or night. Nobody will care whether you are in your bed, or in your bath, or on your holiday, or at the theatre—if any one of the children of men has a pain or a hurt in him you will be summoned. And, as you know, what little vitality you may have accumulated in your leisure will be dragged out of you again.

SOME OBLIGATIONS.

“In all time of flood, fire, famine, plague, pestilence, battle, murder and sudden death it will be required of you that you report for duty at once, that you go on duty at once, and that you stay on duty until your strength fails you or your conscience relieves you, whichever may be the longer period. This is your position. These are some of your obligations, and I do not think that they will grow any lighter. Have you heard of any legislation to limit your output? Have you heard of any bill for an eight-hour day for doctors? Do you know of any change in public opinion which will allow you not to attend a patient when you know that the man never means to pay you? Have you heard any outcry against those people who can really afford surgical appliances, and yet cadge round the hospitals for free advice, a cork leg, or a glass eye? (Laughter.) I am afraid you have not.

PRIVILEGES OF DOCTORS.

“It seems to be required of you that you must save others. It is nowhere laid down that you need save yourselves. That is to say, you belong to the privileged classes. (Loud laughter.) I am sorry you have met my demonstration with a certain amount of levity. May I remind you of some of your privileges? You and kings are about the only people whose explanation the police will accept if you exceed the legal limit in your car. On presentation of your visiting card you can pass through the most turbulent crowd unmolested, and even with applause. If you fly a yellow flag over a centre of population you can turn it into a desert. If you choose to fly a Red Cross flag over a desert you can turn it into a centre of population, towards which, as I have seen, men will crawl on hands and knees. You can forbid any ship to enter any port in the world. If you think it necessary to the success of any operation in which you are interested you can stop a 20,000-ton liner with mails in mid-ocean till the operation is concluded. You can tie up the traffic of a port without notice given. You can order whole quarters of a city pulled down or burnt up, and you can trust on the warm co-operation of the nearest troops to see that your prescriptions are properly carried out.

“To do your poor patients justice, we do not often dispute doc-

tors' orders unless we are frightened or upset by a long continuance of epidemic diseases. In this case, if we are uncivilized, we say that you have poisoned the drinking water for your own purpose, and we turn out and throw stones at you in the street. If we are civilized, we do something else, but a civilized people can throw stones, too. You have been, and always will be, exposed to the contempt of the gifted amateur—the gentleman who knows by intuition everything that it has taken you years to learn. (Laughter.)

EXPOSED TO ATTACK.

“You have been exposed—you always will be exposed—to the attacks of those persons who consider their own undisciplined emotions more important than the world's most bitter agonies—the people who would limit, and cripple, and hamper research because they fear research may be accompanied by a little pain and suffering. (Cheers.) But you have heard this afternoon a little of the history of your profession. You will find that such people have been with you—or rather, against you—from the very beginning, ever since, I should say, the earliest Egyptians erected images in honor of cats—and dogs—on the banks of the Nile. (Laughter.) Yet your work goes on, and will go on.

TRAINING COUNTS.

“You remain now, perhaps, the only class that dares to tell the world that we can get no more out of a machine than we put into it; that if the fathers have eaten forbidden fruit, the children's teeth are very liable to be afflicted. (Loud laughter.) Your training shows you that things are what they are, and will be what they will be, and that we deceive no one except ourselves when we pretend otherwise. Better still, you can prove that you have learned.

RESULT OF UNHEEDED WARNING.

“If a patient chooses to disregard your warning, you have not to wait a generation to convince him. You know you will be called in in a few days or weeks, and you will find your careless friend with a pain in his inside or a sore place on his body precisely as you warned him would be the case. Have you ever considered what a tremendous privilege that is? (Laughter.) At a time when few things are called by their right names—when it is against the spirit of the time even to hint that an act may entail consequences—you are going to join a profession in which you will be paid for telling man the truth, and that every departure you may make from the truth you will make as a concession to man's bodily weakness, and not mental weakness.

RESPONSIBLE PROFESSION.

"Realizing these things, I do not think I need stretch your patience by talking to you about the high ideals and the lofty ethics of a profession which exacts from its followers the largest responsibility and the highest death-rate—for its practitioners—(laughter)—of any profession in the world. If you will let me, I will wish you in your future what all men desire—enough work to do and strength enough to do the work." (Loud cheers.)—*Exchange*.

NOTES ON THE LACTIC FERMENTS, MORE ESPECIALLY
THOSE INHIBITING INTESTINAL PROTEID
PUTREFACTION.

BY KARL GOLDSTONE, JERSEY CITY.

Metchnikoff's "Nature of Man," his "Essais Optimistes," and "Quelques Remarques Sur le Lait Agri," and similar communications from other authorities, together with the astonishing facts as to the age attained by those races largely using preparations of sour milks, have brought the matter to the attention of the medical profession and general public of all countries. A review of the subject, therefore, is interesting, especially in view of the number of commercial lactic ferments which are now being brought to notice. Dr. Gardette (*International Therapeutics*, 1906) says: "Normally the intestine abounds with a microscopic flora composed of saccharolytic bacilli acting chiefly on the carbohydrates. Under certain conditions these saccharolytic bacilli are diminished in number and are replaced by the proteolytic microbes of nitrogenous putrefaction. This microbial substitution of antagonistic bacilli is the key to the etiology of intestinal auto-intoxication." In this discussion the value of lactic acid forming ferments as preventatives of auto-intoxication, and the prevention of arterio-sclerotic changes and premature senility, will not be considered at length. Suffice it to say that Metchnikoff's reasoning is based on the fact that proteolytic bacteria proliferate in an alkaline environment with production of certain toxins, skatol, indol, etc., while Missier, Massol and Grigoroff have proved that the proteid-destroying bacilli are unable to live in an acid medium. We have, therefore, two methods at our disposal to combat intestinal auto-intoxication, *i.e.* (1) by rendering the intestinal area acid; (2) by introducing into the intestine bacilli directly antagonistic to those which attack the proteids.

The crude ferments which have been used for ages by Oriental races are very numerous; the best known are the *maya* of Bulgaria,

the leben of Syria, the ariel of North Africa, the cioddu of Sardinia and the various ferments used in India for making Dalh, ad hoe, all of which contain wild yeasts, bacilli and cocci, which give rise to fermentation and formation of lactic acid. Some of these are positively harmful, such as the streptococcus, while others, like the bacillus subtilis, are harmless, and most of them fortunately appear to be unable to resist destruction by the gastric juice.

Herter, Metchnikoff and Massol appear to have been the first to isolate and study the powerful Bulgarian bacillus which is able to reach the intestine and continue to proliferate in the intestine with production of lactic acid and inhibition in a great measure of the formation of indican by the colon bacillus and other proteid-destroying bacteria. This so-called "bacillus of Massol" persists in the feces for months in spite of the saprophytic bacteria with which it may come in contact. This is a great advantage, since, according to Cohendy (*Archives de la Societe de Biologie*, No. 17, 1906), the bacillus bulgaricus continues to proliferate for weeks in the intestine after cessation of the daily administration of fresh cultures, and so the prevention of putrefactive auto-intoxication is prevented once its growth is established in the gastro-intestinal tract. That the indican index and other symptoms of intestinal putrefactive changes are arrested is maintained by Herter (*British Medical Journal*, Dec. 25, 1907), Pouchou, of Lausanne, and others.

The specific lactic acid ferments include a number of species, some of which convert all the sugar into lactose, and others only a certain proportion. Some bacteria curdle milk, others only partially, through the medium of enzymes, such as casease, while others again produce gases, aromatic principles, etc., so that when we consider the variable sources and quality of milks and the conditions which the various lactic acid ferments bring about, it is easy to understand the great irregularities in the standards of the butter-milks of various countries.

Another very important point is the vitality of this Bulgarian bacillus in the presence of pathogenic organisms, since when typhoid, cholera, and other bacteria are made in suitable culture media in conjunction with it, the bacillus of Massol alone is found to proliferate freely. This probably explains the immunity with which the mixed ferments, such as maya, Kefyr grains, etc., are used, since the sour milk resulting from their use, and the large amount of lactic acid resulting, kills such dangerous micro-organisms as the streptococcus. Piffard also found that the Bulgarian bacillus interfered with the growth of the bacillus typhosus, the administration of pure cultures of the Bulgarian bacillus of Massol, therefore, would appear to be indicated in the treatment of the intestinal symptoms of typhoid fever.

This Bulgarian acid bacillus is optionally aerobic and anaerobic,

and seems to adapt itself to feeding on the alimentary carbohydrates, and while it produces immense quantities of lactic acid (2.8 per cent.), the human economy easily decomposes of as much as 12 grammes daily when given by the mouth, this acid breaking up like most organic acids, into carbonic acid and water, which is easily explained by its chemical derivation from the hexoses. Tigersted states ("Physiology," page 297), that lactic acid is normally elaborated as a result of the action of the pancreatic juice and bacteria upon carbohydrates in the small intestine. Sour milk, owing to the presence of this vigorous bacillus, robs the proteid ingesta of its dangers, since putrefactive changes are delayed or inhibited, and the uric excess following faulty metabolism can thus be prevented.

Emerson (*New York Medical Journal*, Feb. 8, 1908) claims that not only is the process of carbohydrates and proteid disintegration occurring in the souring of milk with the Bulgarian bacillus greater, but the resulting lactic acid produced activates peptic secretion and digestion.

Lessge and Hayem long ago showed the useful action of lactic acid in cases of infantile diarrhoea, enteritis, and even in cholera.

In Paris it is claimed that the administration of the lactic ferment by the mouth gives as good, if not better, results than when buttermilk is administered ready prepared, and that milk need not of necessity be given at all.

It is, however, important that either the milk be inoculated with the biologically standardized bacillus or that special pure cultures only be given in tablet form by the mouth, which will outgrow pathogenic and putrefactive bacteria.

As has already been pointed out, many pathogenic and non-pathogenic bacteria will proliferate in a neutral or even acid media, even with production of lactic acid, so that a lactic acid ferment cannot be used indiscriminately, and here the difficulty is to select the ferments, since it is often impossible to differentiate them microscopically from harmless lactic acid-forming bacteria. Many cocci and bacilli, such as *b. coli communis*, *b. oidium lactis* (which also forms butyric acid in addition), *b. prodigiosus*, the bacillus of Friedländer, etc., not only give rise to lactic acid, but simulate the rod-shaped bacilli of the Bulgarian bacillus isolated by Massol, and some of them may produce the extremely toxic tyrotoxin, while others are capable of actually destroying the proteids; so that impure cultures may do serious harm.

The true Bulgarian bacillus of Massol, however, is the only one yet known to produce succinic as well as lactic acid, and, while it interferes with the formation of butyric acid and is unfavorable to the proliferation of some pathogenic cocci, bacilli and spirilla, it does not entirely prevent the growth of bacteria such as the saccha-

romyces cerevisine and lactic acid-forming b. subtilis, b. oidium lactis, etc.

The maya ferment used in Bulgaria, for example, besides three useful bacilli mentioned, certain yeasts, and numerous other bacilli, some of which are certainly injurious.

Selected Lactic Ferments.—In order to obviate these inconveniences, scientific selection should be made to replace these natural ferments, and the bacillus of Massol is, therefore, usually selected because it is the most energetic producer of lactic acid, besides being very resistant. It is found in practice, however, that this bacillus, when isolated, not only brings about the coagulation of milk, but also attacks the fats, saponifies them too much, and communicates to the milk a disagreeable taste. Metchnikoff has found that this does not take place, however, when it is cultivated in company with another lactic bacillus. It is this principle which has been utilized for the preparation of fermentlactyl, the selected lactic acid ferment utilized in Paris.

Natural or boiled milk requires from six to seven hours for complete digestion, while, owing to the partial digestion of the casein and the conversion of a part of the fats by the lactic ferments, buttermilk needs only from three to four hours for complete assimilation.

To counteract the proliferation of pathogenic bacteria, yeast is largely used in the preparation of koumys, zoolak, etc., and the presence of some few cocci does not of necessity give rise to the harmful buttermilk. In this connection it is well to quote from the report of Bertrand and Gustava Weisweller (*Annales de l'Institut Pasteur*, December, 1906), of which the translation is as follows:

The Bulgarian ferment acts with a different degree of intensity on the principal substances contained in milk. The Bulgarian ferment hydrolyses nearly the whole of the sugar contained in the milk. It transforms next the glucose and the galactose resulting from this hydrolysis, into lactic acid. Next to the lactic acid (which easily attains 25 grammes per litre in volume), we find a little succinic acid (only about 1.2 gramme per litre) and a very small quantity of formic acid.

This Bulgarian ferment is the first real lactic ferment producing succinic acid. It is also the first example we have of a lactic ferment separating visibly the lactose before transforming it into an acid.

The commoner, quick-growing ferments which sour milk on exposure to the air, soon become exhausted, and a totally different class of ferment soon renders the milk alkaline. This is especially the case when pasteurized milk is used.

In conclusion, therefore, we see that certain lactic acid bacilli,

when carried into the intestines along with our food, continue to decompose sugary and starchy foodstuffs into lactic and succinic acids, which in their nascent state are endowed with considerable activity against the bacteria of putrefaction.

Clinical experience shows that these lactic acid bacilli exert (*a*) a local action on intestinal lesions (tuberculosis, etc.); (*b*) an antiseptic action on putrefactive processes; (*c*) a reflex action on the liver and pancreas, the normal secretions of which are increased; (*d*) a general tonic action on the whole organism, due to the lactic acid acting as such after re-absorption into the blood; (*e*) since 1 c.c. of sour milk prepared with the bacillus of Massol may contain as many as 500,000,000 living bacilli and the tablets of ferment lactyl immense numbers, it is only necessary to establish this bacillus in the intestine thoroughly, either by administering sour milk, or, when this is objected to by the patients, the ferment lactyl tablets themselves, to continue the proliferation of a healthy intestinal flora, which needs but small daily additions of these active lactic ferments to maintain this desirable condition.

We see, then, the importance of selecting pure cultures of these lactic acid ferments and not being content with the "say-so" of commercial laboratories of the mere production of the coagulation of milk by alleged lactic ferments.—*Exchange*.

SUGGESTED REVISION OF HIPPOCRATIC OATH TO CONFORM WITH PRESENT-DAY STANDARDS AND CONDITIONS

I swear by Apollo the physician, by Aesculapius, by Hygeia, Panacea, and all the gods and goddesses, that, according to my ability and judgment, I will keep this oath and stipulation: to employ whenever possible proprietary preparations; to abuse as far as may be the dispensing of medical charity; to obtain as many hospital appointments as possible and selfishly exclude all other practitioners from the benefits resulting therefrom; and to be ultraconservative in my attitude toward new truth. I will from time to time publish highly technical articles in the journals of medicine, in which abstruse, exceptional subjects of esoteric interest will be pedantically dealt with. I will adopt all feasible measures tending to unfit me for the practice of the art and be anything from the theologian to horseman except physician. From time to time I shall do my utmost to obstruct the course of justice in the courts of law, giving lying testimony on behalf of any cause offering the highest bid for my services as an expert witness. In all my professional work financial considerations shall stand first and the ideals of the Fathers last. I shall do a large amount of

unnecessary operating, especially upon women, and shall mulct such patients in fees. I will engage in laboratory work of recondite nature bearing no practical relation to the requirements of those afflicted with disease. As presiding officer of a medical society I shall make no attempt to seek out and exploit new talent, but shall repose the scientific programs therein offered in the hands of a clique, the Snodgrasses, Wellers, Winkles and Tupmans found in every medical Pickwick Club. While I continue to keep this oath inviolate, may it be granted me to enjoy life and the practice of my art, respected (?) always by all men; but should I break through and violate this oath, may the reverse be my lot.—*Exchange.*

THE ESTIMATION OF SUGAR IN URINE BY MEANS OF REAGENT TABLETS.

Medical practitioners and pharmacists called upon to do urine analysis, have long felt the want of a sufficiently accurate and yet simple method for the estimation of sugar, and it is to be hoped that the introduction of Merek's Reagent Tablets for the Estimation of Sugar in Urine, obviating the use of complicated apparatus and intricate manipulations, while affording satisfactory results, will prove a great convenience to the busy physician and pharmacist. As the tablets keep indefinitely, the errors resulting from the use of a deteriorated solution are also avoided.

The application of Fehling's test is the method underlying the use of the tablets, *i. e.*, that cuprie oxide in an alkaline solution is reduced by glucose, when the two are boiled together. The components of Fehling's solution have been put up in two kinds of tablets, one containing the copper salt and the other representing the required amount of alkali.

The tablets are accurately dosed, and a solution prepared by dissolving one of each kind in water has a constant reducing-value standardized against 0.01 gramme of glucose. By using a solution of one of each kind of tablet and varying the amount of urine added, it is possible to determine the percentage of sugar present. For instance, if the urine to be tested contains 1 per cent. of sugar, 1 c.c. will completely reduce the copper oxide contained in a solution obtained from one of each kind of tablet; on the other hand, should the urine contain 0.1 per cent. sugar, 10 c.c. will be required to reduce the same solution.

DIRECTIONS FOR USE.

Dissolve one copper and one alkali tablet in 2.5 c.c. of water and heat the resulting solution, as soon as it begins to boil add

2 c.c. of urine, and boil for one minute. After reaction has set in denoting the presence of sugar, filter, the color of the filtrate will serve as an approximate indication of the percentage of sugar present. Should the filtrate be yellow or brown, the urine contains more than 0.5 per cent. sugar; if, on the contrary, it is green or blue, less than 0.5 per cent. of sugar is present. Based upon these conclusions, the same test is repeated, but on the following lines: If the urine has been found to contain more than 0.5 per cent. of sugar, 1 c.c. is now added to the solution obtained by dissolving a pair of tablets; if, on the other hand, the preliminary test demonstrated the presence of less than 0.5 per cent. sugar, 4 c.c. of urine should be added. The color of the filtrate in this case is again an indication for carrying out another test on the same lines as the other two, as now it has been ascertained whether the urine contains over or under 0.25, respectively 1 per cent. of sugar. When the filtrate has a pale green color, due to a slight excess of Fehling's solution, the end point has been reached: the amount of sugar present in the quantity of urine employed to carry out the test corresponds to the cupric oxide contained in the test solution obtained by dissolving the pair of tablets. This result is usually obtainable by three or four tests; only in the case of a urine having a very high percentage of sugar will it be necessary to repeat the operations more frequently before arriving at an exact result. In this case it is advisable to dilute the urine with water 1:10 to ensure greater accuracy.

The following table shows the corresponding quantities of urine and percentage of sugar, based on the use of a solution obtained from one pair of tablets:

0.5 c.c. of urine employed	= 2	per cent. sugar
1 c.c. of urine employed	= 1	per cent. sugar
2 c.c. of urine employed	= 0.5	per cent. sugar
3 c.c. of urine employed	= 0.33	per cent. sugar
4 c.c. of urine employed	= 0.25	per cent. sugar
5 c.c. of urine employed	= 0.20	per cent. sugar
7 c.c. of urine employed	= 0.15	per cent. sugar
10 c.c. of urine employed	= 0.1	per cent. sugar

The use of the tablets will prove especially useful in cases of diabetes, where a daily control of the percentage of sugar has to be made for a long period, as here a single, easily performed test will suffice to show whether an increase or decrease has taken place.

Tablets for the determination of albumin in urine, according to Riegler and Esbach, are also obtainable.—*Exchange*.

COLD WATER AND RIGHT REASON

COLLEGE towns throughout Canada are having their troubles. Youth and high spirits simply will not behave like their grandsire carved in alabaster. In the pursuit of culture it seems almost inevitable that students shall tear down a certain number of shop signs, destroy a certain number of fences, make a certain amount of hideous din and horn-squawking, get into a certain number of fights, and have a certain number of their heads cracked by the police. Only thus and so can the full measure of sweetness and light penetrate the undergraduate system. It is also necessary to smoke a certain number of rank briar pipes and smell up the streets as one walks along. Without these accomplishments a college education can not be called liberal. All the learning is not between the covers of books. The face of human nature is worth conning, as the wise student believes and practises. At forty we are prepared to admit that alma mater taught us a great deal of slush, but we return thanks for the instruction we had from her in good comradeship. It was she, after all, that first rubbed off our corners and fitted us comfortably into the social scheme. We may forget our humanities, but we do not forget the humanity we got at college. And it is usually when cultivating the social instinct that college students get into trouble with the police, who do not understand what an important part it is of the training. The other day college students in Toronto commandeered a green-grocer's window, and pelted sober cits with onions and cabbages. This was outrageous, but natural. It was the social instinct. A college student by himself is a rational being. When he runs in packs he is a wolf. But he is all right at that—he and his little violences. The Toronto authorities are sensible enough when they refuse to take him too seriously. Student riots, hereafter, are to have the hose turned on them. This should be effective. Cold water thrown on the sizzling crowned heads of Europe would have averted many a bloody war. Cold water is a great aid to right reason. It should help the student quite as much as black coffee, hypophosphites, and wet towels, which are among the firmest supports of the human mind at examination time.—*Collier's*.

COMPLAINT is made that the beery atmosphere emanating from a brewery drives men to drink. Never thought of that. Suppose the sometimes perceptible perfume from a garage makes automobile thieves. Criminologists will now please get busy.—*Motor Print*.

Laryngology, Rhinology

IN CHARGE OF
PERRY G. GOLDSMITH, M.D.
TORONTO.

and Otology

FOUL BREATH: ITS CAUSES, PATHOLOGY AND TREATMENT

ANDREW WYLIE (London) (*West London Med. Journ.*, Vol. 13, No. 2, April, 1908), in a very interesting paper tabulates various causes which conduce to breath foetor. He classifies the types of foetor as: (1) The putrefactive type; (2) the sulphuretted hydrogen type; (3) the garlic type; (4) the sweetish type; and (5) the toxic or hepatic type. He further classifies foetor breath according to the different regions responsible for its source, summarizing them thus: (1) Diseases of the nose and its accessory cavities, causing nasal obstruction and mouth-breathing; (2) imperfect deglutition; (3) oral and lingual affections; (4) diseases of the teeth and gums; (5) diseases of the tonsils; (6) chronic suppuration of the middle ear; (7) affections of the naso-pharynx; (8) diseases of the lung; (9) foreign bodies in the mouth, nose, pharynx, or larynx; (10) constitutional causes.

Some diseases of the nose cause a specially pronounced odour. For example, rhinitis sicca, which arises when the secretion is impaired or diminished in quantity and quality. A similar condition is found in atrophic rhinitis, where actual structural degeneration of the mucous membrane has taken place. Thus, in caseous rhinitis, where the pus and debris are charged with various forms of moulds, yeasts, and putrefactive bacteria, such as *Aspergilla torulae* and the *bacillus butyricus*, and in chronic diseases of the accessory cavities where pus is lodged in the maxillary antrum, or the ethmoidal, frontal, or sphenoidal sinuses, also in tertiary syphilis with necrosis of the ethmoid or vomer. In septal perforations, whether from operations, from tuberculosis, or syphilis, there is also foetor, and the same is found when polypi and sinusitis co-exist. Generally speaking, foetor may be present in any malformation of the nose which interferes with free discharge and proper ventilation.

Speaking of the constitutional causes, he mentions: (1) Gastro-intestinal derangements and dyspepsia, especially those which are associated with dilatation of the stomach. In patients troubled with severe chronic constipation there is a peculiar sickly,

almost faecal odour from the breath. Spirit drinkers have quite a different odour from beer drinkers; the former is of a vinegar type, while the latter have the characteristic smell of stale malt liquor. The breath of cigar and pipe smokers has a different smell according to the favorite form of using tobacco. (2) Different varieties of glycosuria cause a sweetish odour to the breath. (3) Menstruation always causes some change in the breath; in some individuals it is so pronounced that they can hardly mix with society during that period. (4) During lactation also in some patients there is a marked odour from the breath. (5) Drugs have a great influence on the breath, and it is one of the signs to watch for in their administration. Lead and mercury produce a well-known effect on the gums, and in extreme cases foetor. All preparations of sulphur cause a characteristic sulphuretted hydrogen smell of the breath. Copaiba and valerian have a cat's-meat smell, iodoform a rancid smell, and belladonna and opium diminish secretion and cause a dryness of the mucous membrane to which bacterial activity may be superadded. (6) Occupations have also a great deal to answer for as regards foul breath. Milkmen, or those continually working in milk, have a peculiar odour, owing to constant contact with the *B. butyricus*. The reason of this is probably the direct transference of the bacillus by the fingers to the nose with consequent rhinitis. The same theory applies to workers among skins and furs, who have a peculiar animal odour. Those who work with phosphorus, lead, or brass, have a peculiar metallic odour from their breath, which is associated with rhinitis and "spongy" gums. (7) Many nervous diseases cause an odour from the breath, such as is found in paralysis and apoplexy. The foul breath which frequently follows a hemiplegic attack is doubtless quite familiar. Mental dulness and physical disability prevents proper cleansing of the lips, teeth, and tongue; thus sordes accumulate and foetor is produced.

Dealing with the treatment of these conditions he points out that successful treatment of foetid breath depends first upon a clear recognition of the cause; secondly, on the persistent and thorough employment of the methods adopted; and thirdly, on the intelligent co-operation of the patient. Remedies to overcome foetor must not be taken in hand in a half-hearted manner; they must be persevered with most thoroughly, and the patient should be instructed in every detail of the technique, whether this includes a douche, spray, or insufflation. A mere temporising by the use of "deodorisers" only results in disappointment, if the fons et origo mali remains untouched. The chief aim in overcoming foul breath is to treat and remove the immediate cause, which is usually bacterial in origin, whether primary or secondary.

With the object of clearing away foetid accumulations in the nose and naso-pharynx, "solvent" douches must be employed. It is useless merely to employ antiseptics which do not possess the power of dissolving mucin, albumen, and the constituents of crusts. The best ordinary solvent is sodium sulphate (1 per cent. solution). The nose should be thoroughly douched with this until the breath-way is free from crusts and caseous matter. Antiseptics can be employed afterwards direct to the membrane by means of sprays. In mild cases, when the factor is not severe, and when the mucous membrane is still sensitive, the olfactory function not being destroyed, an atomiser of liquid paraffin containing menthol, oil of cinnamon, or eucalyptus is preferable, but, if the factor be very intense, Dobell's alkaline solution of phenol may be sparingly used.

Healthy secretion is restored by gentle stimulation. This can be done in mild cases by using a snuff composed of boracic acid with otto of roses, but when the disease is very atrophic and secretion scanty, 5 per cent. of lysoform should be added as a powerful stimulant and antiseptic. Sea water, boiled and decanted, forms an excellent douche, especially when combined with a visit to the sea air. The nasal and pharyngeal mucous membranes, except in cases of atrophic rhinitis, are very sensitive, and will not tolerate antiseptic solutions of anything like the strength and intensity which the mouth does. Densely hard crusts are painlessly removed by inhalation of steam, camphor being added to the hot water as a stimulant. To facilitate oral hygiene, solutions of lysoform (1 per cent.), sanitas, peroxide of hydrogen, etc., are most beneficial; permanganate of zinc (1 in 500) or zinc chloride ($\frac{1}{2}$ per cent.) is recommended in cases of "spongy" gums."—*Journal Laryngology*.

THE VALUE OF OESOPHAGOSCOPY FROM A DIAGNOSTIC AND THERAPEUTIC POINT OF VIEW.

CONTRARY to the usually accepted view that the oesophagus is a collapsed tube, the observations of the author with the oesophagoscope on the living subject, go to show that it is, for the greater part of its extent, an elongated fusiform cavity. Only for the first 4 cm. of its proximal portion and its terminal 2 cm. are its walls in apposition. This disposition of the tube is ascribed to adhesions binding its wall to adjacent structures and to the aspirating power of the thorax. After passing the oesophagoscope for 7 or 8 cm. into the gullet the fusiform portion is reached, and its wall can then be explored without contact with the instrument. Malignant growths, or the bulging of an aneurism, can thus be viewed at a

distance, avoiding all chances of perforation, as might occur with the ordinary bougie. The appearance of the upper and lower extremities of the canal presented by this method of examination is fully described; both the author and Killian consider them to be sphincters, closed except during deglutition, etc. As regards diagnosis, the writer is of the opinion that oesophagoscopy is the only method affording precise evidence concerning lesions of the oesophageal wall, or the position of a foreign body. Contrasting the superiority of this method with others at our disposal, such as the passing of bougies and the use of bismuth emulsions with the fluorescent screen, the interesting point is noted that, from the fact that carcinomata are invariably associated with spasmodic strictures usually situated some 4 or 5 cm. above them, both the bougie and bismuth are, in such circumstances, arrested on the proximal side of the true lesion. With the oesophagoscope the true nature of the parts beyond are revealed. The value of the method in the diagnosis of foreign bodies is discussed. Subjective sensations as an aid to location are often misleading, and the X-rays frequently prove useless, either owing to the fact that many bodies do not arrest them, or difficulty may be experienced in truly interpreting the projection of the shadow of the screen.—*M. Guisez*, (*"La Presse Medicale,"* February 12, 1908).

SPECIMENS FROM CASES OF SARCOMA AND CASES SIMULATING SARCOMA IN THE UPPER AIR PASSAGES.

THERE is not infrequently a great deal of dissatisfaction and uncertainty with the pathological findings on tissue removed from the upper respiratory tract. A growth may clinically have all the evidences of malignancy, and yet the microscopic report may show it to be benign. On the other hand, an apparently simple and innocent mass may be reported as undoubtedly malignant. Those who report cases of malignant disease as having been cured by simple or new measures, should make sure, unquestionably so, that there can be no doubt as to the original nature of the disease, and it would be of very great advantage to give the pathologist's name. Those who have not been specially trained and have not had large experience in examining nose and throat tissue, should not be depended upon for a positive diagnosis.

Dr. Jobson Horne, in his reply to the discussion on this paper, spoke as follows: On a previous occasion he had expressed his opinion that sarcoma in the upper air passages was more often diagnosed than it existed, the regions lending themselves to the development of vascular neoplasms of an embryonic structure.

The historical findings often supported a diagnosis of sarcoma, whilst the clinical course of the case was that of an innocent neoplasm. Therefore a negative report on the question of sarcoma in these regions from a pathologist counted for more than a positive one, unless the pathologist were fully acquainted with the clinical facts of the case. By the elimination of the endotheliomata and the fibro-angiomata, the number of alleged cases of sarcoma had been reduced. The specimens exhibited were from types of cases, and served to illustrate those points. In each case the question of sarcoma was raised either by the pathologist or by the clinician. The cases came under observation as far back as ten to six years ago; he was therefore in a position to state the subsequent history in eight of the nine cases—which was innocent.—(*Proceedings from the Laryngological Section of the Royal Society of Medicine*, Vol. 1, No. 3, June, 1908).

THE KILLIAN FRONTAL SINUS OPERATION—ITS RELATION TO OPHTHALMOLOGY

LONGWORTHY, H. G., Dubuque, Iowa, (Ophthalmology, Oct. 1907), says that so radical a surgical procedure as the Killian frontal sinus operation should be understood by all ophthalmologists. The characteristics of such cases of inflammation of the frontal sinus as present eye symptoms are tumor just above the inner canthus, exophthalmos downward and outward, and little, if any, pain. Diplopia is not constant. The exophthalmos is due to the pus breaking through the inner wall of the orbit. The orbit swelling is found to be firm, elastic and fluctuating. Nasal examination is often negative. Sometimes the only eye symptom is oedema of the upper lid, chiefly of its inner half. The X-ray plates are a valuable aid in diagnosis and make clear the size and location of the frontal sinus and something of its condition. It is best to make at least two lateral and one antero-posterior plate. The pathological picture is somewhat as follows: During an acute inflammation of the mucous membrane lining the sinus there occurs a discharge of a considerable quantity of serous fluid. The cavity being insufficiently drained, the oedema of the membrane persists, blocking the ostium. The infected serum soon changes to pus. The membrane and bony wall begin to thin and sometimes the retained secretions escape into the orbit. The operation of Killian produces the least disfigurement, requires but nine or ten days after treatment, and is comparatively free from danger. The usual frontal incision is made through the eyebrow and extending down the side of the nasal bone. The frontal sinus is opened and

the bony plate cut away in the orbit and nasal cavity, leaving the bridge of bone along the brow, saving the pulley of the superior oblique muscle, if possible. The limits of bony removal are usually the trochlear attachment and supraorbital margin above, the anterior ethmoidal vessels behind and the lacrimal groove below. The ethmoid cells are curetted and the whole of the middle turbinal is removed, if necessary. Any part of the floor of the frontal sinus can be reached and curetted. The ethmoid region is packed with gauze, draining the frontal sinus. The wound is sutured. The sutures are removed on the fourth or fifth day. There is usually no recession of the globe, no diplopia, no interference with the function of the lacrimal sac, no infection of the globe, and vision is unimpaired. There is, however, a tendency to atrophic rhinitis, chronic laryngitis, etc., following such destruction of turbinate tissue and substitution of scar tissue.

THE CLINICAL PATHOLOGY OF AURAL DISCHARGES.

DR. WYATT WINGRAVE (Otolological Section, Royal Society of Medicine, May 2, 1908) discusses this very important part of disease of the ear. For years Wingrave has been investigating the bacteriology of aural discharge, and he is probably the leading, if not the only authority on the subject. He submits that a careful and systematic examination of the aural discharge will reveal much of the nature of the morbid process which it accompanies; that it should be cytological, as well as bacteriological, and that it should constitute an essential part of our clinical routine. He discusses the subject under the following headings:

Gross Characters of Discharges—

Factor Color, Density. Technical—
Collection, fixing and staining.

Composition—

Epithelium; Leucocytes and Lymphocytes; Epithelioid;
Myelocytes, etc.

Bacteria—

Matrix—

In collecting material, whether for films or cultures, the following precautions should therefore be taken:

(1) It should be obtained from a point nearest to its probable source.

(2) All contaminations should be avoided, and every instrument sterilized.

(3) Its foctor, density, and color should be carefully observed.

SUMMARY.

Acute suppuration of the middle ear in its mild (catarrhal) form is characterized by sharply defined leucocytes (polymorphs), very few lymphocytes and tympanic epithelium, singly or in clusters. A grandiplococcus (*Micrococcus catarrhalis*) most frequently occurs, occasionally associated with mouth organisms such as spirochaete and torulae.

In the severe or suppurative type, leucocytes and erythrocytes predominate at first with a few lymphocytes. Later the erythrocytes disappear, while large mononuclear leucocytes become well marked on about the third or fourth day. Tympanic epithelium occurs early, but disappears until healing commences. The cytoplasm of the leucocyte becomes granular and ill-defined, while the nucleus stains faintly and is distorted and fragmented towards the second week. In infants, lymphocytes are much more numerous than in adults.

Many bacteria are found in acute discharges, including "Throat organisms," but the more prominent are *Diplococcus catarrhalis*, *Diplococcus pneumoniae*, *Streptococcus brevis* and *longus*.

Acute external otitis may occur in several degrees from an acute desquamative process involving the superficial structures only, characterized by nucleated squames, gland epithelium and leucocytes, to abscess or purulent cellulitis, involving the deep structures, when leucocytes and lymphocytes will be abundant, accompanied by streptococci, diplococci, staphylococci and also rarely gonococci.

When the disease assumes a chronic form the discharge is "watery," lymphocytes and leucocytes being few or wanting. Epithelial squames are plentiful, and among many varieties of bacteria the *Penicillium glaucum* is prominent.

The conditions responsible for chronic discharge from the middle ear—comprehensively termed chronic suppuration of the middle ear—are so varied that pathological accuracy demands some differentiation.

As most frequently happens, "granulating tissue" is responsible for the pus. Evidence of this is afforded by the presence of leucocytes of all kinds, large, small, mono, and polynuclear, normal and degenerated, but especially by lymphocytes, which are very numerous, while epithelial cells are not uncommon. Bone disease may be marked by myelocytes or osteoblasts.

Cholesteatoma is indicated by the presence of closely packed acidfast squames, with or without bacteria. This latter may appear to be an unnecessary distinction, but it is really one of great importance, especially when the cells are of antral source, for a

septic cholesteatoma in that situation affords a stronger reason for radical measures than a non-septic one; an interpretation which is amply supported by examination of antral contents removed by operation.

Among the many varieties of chronic discharge, my experience has taught me that there is one which deserves special attention. It is generally very profuse, intermittent, extremely foetid, opaque and of the consistence of cream. On examination it is found to be entirely free from cells, either epithelial or leucocytic, but consists entirely of throat organisms in an albuminous matrix. Strictly speaking it is therefore not true pus, but merely a polymicrobial emulsion. It appears as if the imperfectly drained and ventilated antro-tympanic cavity had assumed the role of cultivating chamber or "septic tank" containing bouillon in which different families of bacteria abundantly flourished.

By the term "throat organisms" is meant a group of bacteria which are nearly always to be found in the mouth and faucial area, either in health or disease, but do not occur in the healthy ear. It includes *spirochaeta foetida*, *bacillus fusiformis*, *leptothrix*, *bacillus subtilis*, *bacillus proteus vulgaris*, *penicillium glaucus*, together with a large variety of moulds and yeasts which may be potentially pathogenic, but for the time are leading a saprophytic existence in the throat.

In this group of cases, which is by no means a small one, a highly "septic" state of the mouth, fauces or nasal cavities invariably coexists, the commonest form being pyorrhœa alveolaris and chronic lacunar tonsillitis, affections which are probably not only responsible for the original infection, but also for repeated renewals of the aural trouble.

With such a discharge, whose most striking feature is the large number of spiral and fusiform bodies with practically no leucocytes or lymphocytes, the existence of an active granulation surface may unhesitatingly be excluded. There is a passive yet highly septic cavity, which calls not only for active aural measures, but also for attention to the original source of infection.

It is the differentiation and identification of such a condition as this that may fully repay the extra trouble of a microscopical examination of the discharge. Such cases further illustrate the necessity for a bacteriological examination of the naso-pharynx, which I have found in healthy subjects to be sterile, but invariably septic in all acute and chronic infections of the antro-tympanic cavity.

It is important to note that in acute exacerbations of the chronic suppurative form, the discharge somewhat resembles the primary acute. Freshly excluded leucocytes prevail with a diplococcus, Pfeiffer's bacillus or streptococci, and diplococci. Lympho-

cytes are often numerous, and myelocytes may be seen should there be any bone complication. In the course of a few days mononucleated leucocytes become plentiful, with a few more lymphocytes and nucleated squames.

In tuberculous examples of this group there will also be present the specific bacilli. But tuberculous discharge, when chronic, is of a very distinct type. It is thinner or watery in character, with white granules or flakes. Lymphocytes are plentiful, with large epithelioid and even "giant-cells." Leucocytes are far less numerous than in non-tuberculous, except during an acute period due to supplementary infection when the discharge is much denser and distinctly purulent in type. The presence of minute amorphous granules and "bone grit" is also a marked feature of tuberculous discharge. Giant-cells are rare, unless the specimen be taken directly from its source. As in tuberculous sputum, *Micrococcus tetragonus* is a frequent attendant. When the process is mixed, as usually happens, many varieties of bacteria will be present and attended by marked foetor.

**CASE OF CHRONIC SUPPURATIVE PANSINUSITIS, IN
WHICH KILLIAN'S COMPLETE OPERATION WAS
PERFORMED ON THE RIGHT SIDE AND ON
THE ANTERIOR AND INFERIOR WALLS
ONLY ON THE LEFT SIDE.**

HERBERT TILLEY, F.R.C.S., at the Laryngological Section of R.S.M., presented the following case:

Dr. T., aged 35, had suffered from a profuse purulent nasal discharge for two years; he used from six to seven handkerchiefs a day. The discharge was very foul, but this was only noticed by the patient's friends. He did not suffer from headache, but a slight feeling of tension over the lower forehead. The maxillary antra were operated on in May, 1907, by a provincial surgeon.

February 12, 1908.—Mr. Tilley performed a complete Killian operation on the right sinus.

March 4, 1908.—The anterior wall and floor of the sinus were removed. The wounds were sutured in their entirety, with the exception of the outer angles, where a small drainage-tube was inserted and ran inwards for the length of the sinus. The upper regions of the nasal cavities are now quite free from pus. A skiagram of the sinuses was shown, which illustrates very clearly their size, the presence of septa and loculated chambers.

Mr. Herbert Tilley said he showed the case to illustrate the

fact that the complete Killian operation was a better method than the incomplete one. He did two operations on the same patient and his reason for the incomplete one on the left side was that there was very little ethmoidal disease there. He sutured the wounds entirely at the close of the operation, except a small point at the outer angle of the eyebrow, where a fine drainage-tube was passed through the sinus, as far as the fronto-nasal canal. He was not responsible for the slight antral suppuration at the present time; he believed it was due to the fact that the whole mucous membrane from the antrum had been removed and its place taken by granulation tissue, which not only suppurated now, but would do so for ever unless it became covered with normal epithelium. (Proceedings of the Royal Society of Medicine, Vol. I., May, 1908.)

SYMPTOMS OF SEPTIC THROMBOSIS, OF THE LATERAL SINUS.

- (1) A history of purulent aural discharge for a year or more. (A case is on record of only two days' discharge.)
 - (2) Sudden onset of the illness, with headache, vomiting, rigor, and pain in the affected ear.
 - (3) An oscillating temperature.
 - (4) Vomiting, repeated day after day.
 - (5) A second, third, or more rigors.
 - (6) Local tenderness and oedema over the mastoid, or in the course of the jugular vein.
 - (7) Stiffness of the muscles of the back or side of the neck.
 - (8) Optic neuritis.—Dr. Balance.
-

A METHOD OF PREVENTING HEMORRHAGE DURING ADENECTOMY.

INGLAURER (*Laryngoscope*, May, 1908) has devised a method for lessening the amount of blood during an adenoid operation. He draws attention to the importance of taking into account the danger that may follow excessive hemorrhage—shock, extra risk of infection because of the anaemia, blood getting into larynx, etc.

His method, described in his own words is as follows: It consists essentially in introducing the draw-strings of a post-nasal tampon before beginning the operation, and of drawing the tampon into place immediately following the adenectomy.

The instruments necessary for the procedure are: (1) A modified Bellocques canula, made of a slender hard rubber eustachian catheter; (2) A rubber sponge of proper size, to serve as a post-nasal tampon. A stout piece of tape is passed through the sponge tied about it, and left with the ends a foot long.

The patient is anaesthetised until the pharyngeal reflex is partially abolished. By means of the canula, introduced through the nose, one end of the tape is drawn through the naso-pharynx and out the mouth. Immediately the mass is removed from the naso-pharynx the sponge is pulled into the pharyngeal vault and held firmly, so as to prevent any excessive loss of blood.

A CASE OF HEMORRHAGE FOLLOWING REMOVAL OF THE FAUCIAL TONSIL.

(1) DUFOUR (*The Laryngoscope*, May, 1908, Vol. XVIII., No. 5), in hundreds of operations with the cold wire snare, met with but one case of severe hemorrhage. The case is as follows: Mr. L. White, aged 35 years, came into my office and requested me to remove his tonsils, saying they bothered him very much and caused a continual bad taste in his mouth, and that he had frequent attacks of tonsillitis. I found them very large, and standing out very prominently from between the pillars. The crypts were filled with cheesy matter, the odor of which was very offensive. They were hard and fibrous in character. I told him that I would only remove one at a sitting, to which he consented. After swabbing it with a 6 per cent. solution of alypin, I loosened the pillars with a tenaculum, drew the tonsil into the snare and completely enucleated it. There was not much bleeding. After keeping him in the office for a while, I sent him home, with orders to remain quiet until the next day. That afternoon a physician telephoned me that there was in his office a man whose tonsil I had removed that morning, that it was bleeding so persistently that he could not arrest it, having run the gamut of styptics. I requested that he be sent to my office, which was done. I tried to arrest the bleeding with the galvano-cautery, pressure, etc., but could not. The vessel was at the bottom of tonsillar space, near the base of the tongue. I soon found that it was no ordinary hemorrhage and must be stopped at once, as he had lost two or three pints of blood. I sent him to the hospital, and while waiting for me he lost at least another pint. I arrived at the hospital about fifteen or twenty minutes after he did. I took him to the operating-room, placed him on his back on the table, and by aid of an electric head mirror to illuminate the throat, I passed a suture through the lower part of the pos-

terior pillar, drawing it forward and over the bleeding vessel; the suture was then passed through the anterior pillar. A continuous suture was thus used, suturing posterior and anterior pillars together. This stopped the hemorrhage at once. He was kept in the hospital all night. He refused to remain longer, so went home the next morning. I judged that he lost between three and four pints of blood. He was pretty well exsanguinated, but soon recuperated. The stitches were removed in a week.

A CASE OF THYRO-LINGUAL FISTULA TREATED BY ELECTROLYSIS AND EXCISION.

DR. DUNDAS GRANT said the present was the third time the patient had been operated upon. The first operation was done by a well-known and skilful surgeon, but recurrence took place. In the second operation, done by himself, the result seemed at the time to be good, but in two years distinct recurrence had ensued. On the third occasion he determined to have the thing electrolyzed, and inserted a platinum needle, which he pushed up to the hyoid bone, while Dr. Lewis Jones carried out the electrolytic process. Dr. Grant then proceeded to dissect out the sinus. That time the operation was successful. The last operation on the present case was done in 1906, and there were no signs of recurrence. In the case which he showed with Dr. Mackenzie it would have been impossible to introduce the needle as it existed, but after the tube had been exposed and straightened it might have been done. If he had another such case, however, in which he could pass a platinum needle through the sinus, he would try the effect of electrolyzation without dissection. In the present case he did not know which contributed most to the case. (Proceedings of the Royal Society of Medicine, Vol. L, No. 7, May, 1908.)

TWO RADIOGRAPHS TO ILLUSTRATE THE VALUE OF THE X-RAYS IN SOUNDING AND WASHING OUT THE FRONTAL SINUS.

WHEN unprovided with the X-rays it is usual for us to depend upon the direction taken by the canula to decide whether the frontal sinus has been entered or not. In the first photograph it will be seen that the point of the canula passes up towards the frontal sinus and that the portion of it outside the anterior

nares lies flat against the upper lip. These two points might make us think that the frontal sinus had been entered, particularly when pus could be washed out, as it was in the case to which this photograph refers. But on the screen, as shown in the photograph, it will be seen that the cannula had not entered the fronto-nasal duct, but had passed up into an anterior ethmoidal cell, and that its point was pressed against the floor of the anterior fossa of the skull. It will readily be recognized that any roughness in manipulation in this area might have serious results.

The second photograph shows the same case, with the same cannula, where the instrument was, with the help of the X-rays, securely guided up into the centre of the frontal sinus. (Sinclair Thompson, in the Proceedings of the Royal Society of Medicine, Vol. I., No. 7, May, 1908.)

P. G. G.

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Doctors will confer a favor by sending news, reports and papers of interest from any section of the country. Individual experience and theories are also solicited. Contributors must kindly remember that all papers, reports, correspondence, etc., must be in our hands by the first of the month previous to publication.

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No. 6.

Editorials.

DEAN REEVE RESIGNS.

DR. R. A. REEVE, for twelve years Dean of the Medical Faculty of the University of Toronto, has resigned. The duties of the Dean are to preside as Chairman of the Faculty and to have a general supervision of the interests of that body. He is, *ex-officio*, a mem-

ber of the caput and Senate, and is the official head for entertaining the faculty's distinguished visitors.

The Medical Faculty of the University of Toronto was started in 1843. It was abolished in 1853, but was reorganized in 1887. Dr. W. T. Aikins was Dean from 1887 to 1893; Dr. U. Ogden from 1893 to 1896, since when Dr. R. A. Reeve has held the office.

During the last twelve years important changes have taken place in the Medical Faculty, and much time had to be devoted to the work of reorganization. A great deal of committee work was also necessitated by matters arising out of the erection of the new medical building in Queen's Park. During his term of office, Dean Reeve has endeared himself to his associates and won the respect and admiration of all who have had business relations with him, by his unaffected cordiality of manner and his strictly honorable dealing.

The Board of Governors of the University have appointed Dr. Charles K. Clarke, Superintendent of the Toronto Asylum, to the vacancy.

J. J. C.

THE ELIMINATION OF TUBERCULOSIS.

FROM data given out at the International Congress of Tuberculosis, held at Washington last September, it appears, that decreased mortality rates from tuberculosis have been noted in many parts of the world. In Prussia, the death rate from tuberculosis, during the last decade, has been reduced 40 per cent.; in New York City, during the past fifteen years, more than half; in Boston, 55 per cent. Dr. L. H. Flick, Medical Director of the Henry Phipps Institute, of Philadelphia, who acted as chairman of the committee having in charge the recent Congress at Washington, announced, that "the white plague" may now be given but fifteen years to disappear from the surface of the earth, as utterly as smallpox. He said: "The total number of deaths from consumption last year in Philadelphia was 3,600; a reduction of 300 has been made in the mortality rate of the past six months, as compared with the year before, and, if the same rate of progress is kept up for six years to come, consumption will be abolished."

In England, Dr. F. Bulstrode, asserts that, in the year 1838, tuberculosis destroyed 60,000 lives in England and Wales; in 1906, with a vastly increased population, this disease destroyed less than 40,000 lives. The tuberculosis mortality in England and Wales, in 1906, was about equal to the decrease, which obtained in the preceding thirty years; therefore, Bulstrode expressed the belief, that, should the decrease in the tubercular death rate continue in the same ratio, consumption would disappear from England and Wales within the coming thirty or forty years.

These statistics and the conclusions drawn from them go to show that great success has attended the efforts put forth by health authorities to prevent the extension of tuberculosis from the sick to the well, and also that the treatment of tubercular patients in sanatoria and in private practice has greatly obviated the tendency to death and saved many lives. In fact, if it were possible in all cases to begin the treatment of tuberculosis at an early stage, when recovery is easy, the anticipations expressed by Flick and Bulstrode would seem less improbable. It is an easy matter to begin the treatment of the smallpox patient during the first days of his ailment and to vaccinate suspects, thus preventing the further spread of that disease: it is quite otherwise with the consumptive patient. Dr. Flick acknowledges, (see Report for 1908, Henry Phipps Institute, p. 60) that two-thirds of the patients who applied for treatment there came at a stage of the disease when recovery is difficult, and when, if it does take place, it means invalidism, in a relative sense, for the rest of life. When, in addition to the chronicity of the disease, "it may be assumed, that, in Philadelphia, in which there are over three thousand deaths from consumption, five to eight thousand houses are contaminated every year by consumptives in a contagious stage of the disease," the elimination of tuberculosis in a few years from that city cannot reasonably be expected to occur. Another fact, which, even were the practice of the notification of tuberculosis and the disinfection of its contagious centres made obligatory, will delay the advent of the elimination of tuberculosis, is the prevalence of that disease among the males who do the hard work. The Census Report of the United States, for 1900, shows that relatively forty-seven more males for every one hundred thousand male population died from tuberculosis, during the year,

than for every hundred thousand females living. The males live more in the open air than the females; but, in spite of it, succumb more frequently to tuberculosis; and this fact seems to show, that hard, exhausting labor is a more potent factor in developing tuberculosis than is the want of fresh air.

Dr. Flick's report also shows, that all occupations, which give fair compensation and do not call for severe physical labor, have a relatively low attendance rate at the Phipps Institute. Thus, the clerk and bookkeeper, who are usually looked upon as the legitimate prey of consumption, stand quite low in the rate of attendance, and the business man, who follows an indoor life, stands next to the policeman, who has an easy life out of doors, with fair compensation. On the other hand, the huckster, the peddler, and the sailor, who work hard in the open air, but who have bad sleeping accommodations, with poor compensation, show a high attendance at the Phipps Institute.

A study of Dr. Flick's most valuable report does not leave the impression, that the elimination of tuberculosis is near. Hard, debilitating work must ever be the lot of many males and of some females, and the implantation and subsequent development of tuberculosis in these workers has been noted. Observation shows, that fair compensation, by enabling the toiler to secure good food and good housing, obviates the weakening effects of hard labor. Even if compensation for hard work should be fixed on a strictly equitable basis, tuberculosis is not likely to become a negligible quantity in the near future; but the sickness rate from tuberculosis would be considerably reduced, if the hard workers got higher compensation.

J. J. C.

THE PRANKS OF COLLEGIANS ON HALLOWE'EN.

THERE is nothing new in the pranks and horse-play of collegians on Hallowe'en; students at the beginning of the twentieth century, with no notion of plagiarism, reproduce the fantastic sports and antics dear to students in every age and clime. Just for the same reason, too, for youth is the season of jollity, and, if, forty years ago, two or three hundred medical and arts students made a noise on University Avenue, or serenaded, in a rather boisterous fashion,

a young ladies' academy, *a fortiori*, 3,750 undergraduates of the University of Toronto could and did make the welkin ring on the evening of Hallowe'en, 1908.

The collegians, who are following the different courses at the University of Toronto, are looked upon by their countrymen as the flower of the nation, the pride of many a good family throughout Canada. In due time, these lads will blossom out into physicians, lawyers, judges, clergymen, engineers, and statesmen. Many of them will illustrate the noblest virtues and highest intellectual attainments of their race in private and public life, and it is to be hoped, that some of them will win the right to place wreaths for science, art and literature very high up in the modern Parthenon.

Now, what will you? They are boys, and University boys are not endowed with a plentiful lack of wit, with most weak hams. By no means. The University lads are not suffering from neurasthenia; but are chockfull of the wine of life, and ready to laugh, chaff, and kick up their heels, except when they are engaged in cramming themselves with classic or scientific lore. Were they to celebrate Hallowe'en in a sedate manner, 'twould be the strangest thing of all. Listening to their college yells, one is reminded of the lines in "Old Mortality":

"Sound, sound the clarion! Fill the fife!
To all the sensual world proclaim
One crowded hour of glorious life
Is worth an age without a name—"

Perhaps so; but then at a jollification nothing should be done which would entail subsequent regret. It's glorious to wake up next morning and find yourself famous; but it's unpleasant to do penance in the pillory of public opinion for some hasty indiscretions—just because you have not been judicious in your jokes, and have crowded several kinds of crude fun into your hour of glorious life.

J. J. C.

EDITORIAL NOTES.

Mental Defect and Inebriety.—In the Report of the Royal Commission on the Feeble-Minded, (*British Medical Journal*, Aug. 15, '08), reference is made to mental defect and inebriety. The Commissioners find, that some 60 to 70 per cent. of the habitual inebriates dealt with under the Acts are *mentally defective*, the evidence laid before them supporting the conclusion that inebriates form a *sub-class of the mentally defective*. In harmony with this view, they arrived at the following conclusions:

1. That the powers and duties of County Committees and of the Board of Control should extend to mentally defective inebriates, as well as to other classes of the mentally defective.

2. That the licensing and inspection of institutions, which are established for the reception of mentally defective inebriates, or in which mentally defective inebriates are received, devolve on the Board of Control.

3. That County and County Borough Councils be placed under a legal obligation to provide accommodation for mentally defective inebriates, or to contribute towards the provision of such accommodation, and to contribute to the maintenance of mentally defective inebriates, including any such inebriates as a criminal court may think proper to commit to an institution, established for the care and control of this class.

4. That the Inebriate Acts be amended so as to facilitate the committal to suitable institutions of persons who are shown, to the satisfaction of a criminal court, to be mentally defective inebriates.

5. That the processes of reception orders and all other methods applicable to other forms of mental defect be extended to mentally defective inebriates.

6. That the existing system of Treasury contributions, payable to State and certified inebriate reformatories, be continued.

The conclusions are given in full, so that the reader may see the exact view which the Commissioners have taken of the association of inebriety and feeble-mindedness in the same individual. This point should be made quite clear. It is not a question of the pathology of inebriety or a question of the moral conduct of the in-

ebriate, but simply the fact that habitual inebriates in Great Britain, in the proportion of from 60 to 70 per cent., actually form a sub-class of the mentally defective. Would it not be opportune, if the Provincial Government were to appoint a commission to investigate the concurrent ratios of habitual inebriety and feeble-mindedness in Ontario? In this Province, the notion that a habitual inebriate should be deprived of his liberty might not meet with popular favor. If our statistics warrant such a course, an Inebriate Act might be passed, so framed as to facilitate the committal to suitable institutions of persons who are shown, to the satisfaction of a criminal court, to be mentally defective inebriates.

Canadian Wines.—From the frequency with which the terms Fine Old Port Wine, Native Port, Canadian Port, appear in the Canadian native wine trade, one might infer that Canadian wine is understood to be similar to port wine. This question has been studied by Mr. McGill, Analyst of the Inland Revenue Department, Ottawa (See Bulletin No. 160, Native Wines), who reports that Canadian ports differ in important particulars from ports of Spanish or Portuguese origin. Karré quotes as the mean of many analyses of port wine the following:

Specific gravity.....	1.0088
Alcohol.....	16.18 (=34.8 proof spirits)
Extract.....	8.25
Sugar.....	6.04
Non-sugars.....	2.21
Total acidity.....	0.42 (as tartaric acid)
Volatile “.....	0.085 (as acetic acid)
Fixed “.....	0.335 (as tartaric acid)

Thirty-one samples of Canadian port wine gave the following results on analysis:

Specific gravity.....	1.0002 to 1.0762
Alcohol (proof spirit).....	16.42% “ 38.18%
Extract.....	2.65% “ 24.29%
Sugar (dextrose).....	1.59% “ 19.00%
Non-sugar solids.....	0.41% “ 3.83%
Total acidity.....	0.525% “ 1.035%
Volatile “.....	0.066% “ 0.473%
Fixed “.....	0.345% “ 0.645%

Mr. McGill thinks, that the diversity of composition illustrated by Canadian port wines implies “a lack of care in manufacture or a regrettable ignorance of what constitutes this type of wine.”

Might it not also imply that Canadian wine is, to a certain extent, an artificial product, made from fermented grape juice, to which varying proportions of sugar are added? The popular taste in Canada may demand a sweet wine, and the high sugar content of most of the samples analyzed at Ottawa would seem to indicate, that they might have been more appropriately designated Canadian Tokay, or Canadian Malaga, rather than Canadian Port. The analyst remarks, that this fact would not prove that dry wines cannot be produced in Canada, because six or seven samples occur in which the residual sugar is less than 0.5 per cent. The great majority of the samples show, that from 8 to 15 per cent. of dextrose sugar is added to the native grape juice, in making wine. The analyst commends the practice of some Canadian wine-makers, who have adopted special names for the brands which they place on the market. From the fact that preservatives, such as salicylic acid and sulphites, are found in the samples analyzed, one would infer, that fermentations other than the alcoholic are prone to occur in the making of Canadian wine, and that chemicals must be used to prevent acidity. This is certainly undesirable, for, as the analyst says, "The production of these esters and other by-products of the natural fermentation of sugar, whose presence gives character and value to the best wines, is hindered, and the resultant beverage, while not necessarily unwholesome, as a wine, is of low quality."

Dilute Sulphuric Acid in the Treatment of Carbuncles and Boils.—In the *British Medical Journal* (August 15, 1908), Dr. J. Reynolds and Dr. Russell J. Reynolds draw attention to the use of dilute sulphuric acid, given per os, to patients suffering from carbuncles or boils. To be effective, doses of 20 to 30 minims, well diluted with water, should be taken every four hours. They say: "In a case of carbuncle treated in this way, it will be noticed that, after the first twelve or eighteen hours, the affected area becomes distinctly circumscribed, and the lesion ceases to extend; softening of the tissues in the affected area takes place, and pus is discharged, healthy granulations commence to form at the base, and the process of repair goes on uninterruptedly. It is quite unnecessary to cut or to interfere with the part in any way, except, perhaps, to apply some antiseptic dressing, such as carbolyzed vaseline (1 in 40) on lint. The treat-

ment should be continued, for at least a fortnight after the lesion has disappeared. The cases in which this treatment has proved efficacious have been uncomplicated with diabetes mellitus."

The authors claim that the results of this simple treatment have been uniformly successful. It does not disturb the patient's digestion nor cause any inconvenience in any way.

Overweight and Underweight.—Dr. Brandroth Symonds has correlated a number of data from the records of 200,000 males weighed in their boots and as ordinarily clad, in a paper on "The Influence of Overweight and Underweight on Vitality" (*New York Medical Record*, Sept. 5, 1908). Overweight is 20 per cent. above the standard for the height and age. The standard of a man of forty years, five feet six inches tall, being one hundred and fifty pounds, he would be overweight should he exceed one hundred and eighty pounds. Underweight is below 80 per cent. of the standard.

Dr. Symonds gives a table, showing the causes from which persons with overweight and underweight die. Overweight is not bad in a young person, who has a tuberculous family history, for the excess of weight should tend to overcome a tuberculous predisposition. Underweight and a tuberculous family history give a mortality of 180 per cent. in the ages below thirty-five; above that age, the influence of tuberculosis depends on the number of cases in the family. Underweight plus dyspepsia is a serious combination below the twenty-fifth year, giving a mortality as high as 150 per cent. Symonds says, that this combination often indicates incipient tuberculosis, which cannot be determined by physical examination. No deductions are given regarding cancer, as far as overweight or underweight is concerned, among men or women. Overweight is common among diabetics. Hepatic cirrhosis is three and a half times as prevalent among persons with overweight, as in the general experience. The other digestive diseases, as well as cirrhosis, are below the normal in persons with underweight, thus showing their moderation in food as well as in drink. Bright's disease, both acute and chronic, is nearly as prevalent among persons with overweight, as in the general experience. Carbuncle is in excess among persons with overweight, perhaps by reason of unrecognized diabetes. Mortality is markedly increased with increase in abdominal girth,

and progressively, as the latter exceeds the expanded chest. Pneumonia is nearly twice as fatal among persons with underweight as among those with overweight; it would almost appear that persons with overweight have a certain immunity to this disease, while others with underweight are more than usually susceptible to it.

Organic heart disease shows an excess among persons with overweight and a deficiency among those with underweight. Cerebral congestion and hemorrhage, cerebral apoplexy and paralysis, and the nervous forms of insanity show a slight excess among persons with overweight, while persons with underweight are below the average. For the best interests of health, one should be near standard weight, within ten per cent. at least.

Deportation of Undesirable Immigrants from Canada.—To restrict the crowding of asylums in Canada with foreign-born persons of the defective type, deportation is being applied with considerable vigor by the Canadian Government. In a special despatch to the *Toronto Globe* the following appears: "Ottawa, Oct. 29, 1908.—During the first nine months of this year, the Immigration Department has deported 1,011 immigrants, as being undesirable citizens. During the same period, 1,266 people have been refused entry from the United States."

In a pamphlet containing a reprint of introductory remarks of S. A. Armstrong, Inspector of Prisons and Public Charities, and Dr. C. K. Clarke, Medical Superintendent of Toronto Hospital for Insane, contained in the report on hospitals for the insane of Ontario for 1907, we notice that preventive measures are recommended, which, if carried out, would lessen the necessity for deportation. Mr. Armstrong advises, that a card catalogue be installed by the Immigration Department, containing the names of all arriving immigrants, date of landing, name of ship on which they came, and other information necessary for identification; also that each immigrant be provided with a medical certificate from a physician familiar with the immigrant's previous history and a certificate from the ship's physician, both certifying that he is physically and mentally fit. A certificate is also required from the head of the municipality in which the immigrant was domiciled, that such immigrant has not been insane nor an inmate of an

asylum or other place of detention, and that neither his father, mother, brothers or sisters have been insane. Lastly, it is recommended, that a more detailed medical examination of the immigrant should be made, either on arrival, or when on board the steamer in transit, by men who are skilled in mental diseases. These recommendations are thorough and are well worthy of consideration.

J. J. C.

PERSONALS.

DR. W. J. WILSON, College Street, has recently spent three weeks at Johns Hopkins Hospital taking a special course of study of diseases of the digestive organs.

DR. C. K. CLARKE, of Toronto Hospital for the Insane, has been appointed by the President of the University of Toronto Dean of the Medical Faculty of that institution. We offer Dr. Clarke hearty congratulations and feel that President Falconer has made a good choice.

DR. FREDERIC BRUSH, of Boston, has been appointed Superintendent of the New York Post-Graduate Medical School and Hospital. Before assuming the position he will devote some time to a study of post-graduate instruction and hospital administration in the various American medical centres.

DR. C. F. MOORE, of Bellevue Avenue, left Toronto ten days ago to spend three weeks making a special study of Abdominal Surgery at Dr. Mayo's Hospital, Rochester, Minn. After that, Dr. Moore goes to Chicago for a short post-graduate course in General Surgery at The Chicago Polyclinic. The Doctor intends disposing of his house on Bellevue Avenue and hopes to build in the northern part of the city next spring.

News of the Month.

ONTARIO MEDICAL ASSOCIATION

THE next annual meeting of the Ontario Medical Association will be held in Toronto on June 1st, 2nd, and 3rd, 1909. The following Officers were elected last year to look after the interests of the Association at the coming meeting:—

President.—Dr. H. J. Hamilton, Toronto.

Vice-Presidents.—Dr. R. R. Wallace, Hamilton; Dr. A. Dalton Smith, Mitchell; Dr. A. M. McFaul, Collingwood; Dr. George Field, Cobourg.

General Secretary.—Dr. E. Stanley Ryerson, 243 College St., Toronto.

Assistant Secretaries.—Dr. Samuel Johnston, 169 Carlton St., Toronto; Dr. J. E. Davey, 145 King Street, Hamilton.

Treasurer.—Dr. J. Heurner Mullin, 201 James Street South, Hamilton.

Chairman Committee on Papers and Business.—Dr. Herbert A. Bruce, 64 Bloor Street East, Toronto.

Chairman Committee on Arrangements.—Dr. Bruce L. Riordan, 73 Simcoe Street, Toronto.

The Committee again decided to adopt the system of dividing up into Sections, of which the following is a list, with their Officers: Surgery—President, Dr. G. A. Bingham; Secretary, Dr. A. B. Wright. Medicine—President, Dr. W. H. B. Aikens, Secretary, Dr. F. A. Clarkson. Obstetrics and Diseases of Children—President, Dr. Adam Wright; Secretary, Dr. J. A. Kinnear. Eye, Ear, Throat and Nose—President, Dr. D. J. G. Wishart; Secretary, Dr. C. Campbell. Preventive Medicine—President, Dr. C. Sheard; Secretary, Dr. C. J. Hodgetts.

General sessions will be held in the afternoons and on one evening, the Sections of Surgery and Medicine meeting every morning, and one of the Special Sections on each morning.

The Committee on Papers and Business have been successful in getting promises of papers from the following men:—

Dr. John B. Deaver, Philadelphia; Dr. E. F. Cushing, Cleveland, on "Copious Water Drinking in Typhoid Fever;" Dr. W. P. Manton, Detroit; Dr. Little, Montreal; Dr. C. H. Vrooman, Winnipeg; Dr. A. Baines, Toronto; Dr. McFaul, Collingwood; Dr. Slemons, New York; Dr. McDonald, New York; Dr. J. M. Elder,

Montreal; Dr. J. M. Rogers, Ingersoll; Dr. Hadley Williams, London; Dr. H. B. Anderson, Dr. W. McKeown, and Dr. C. B. Shuttleworth, Toronto; Dr. E. Ryan, Kingston.

In order to get in closer touch with the various city and country medical societies throughout the Province, a motion was passed making the Presidents of these Societies Corresponding Members of the Committee. As some difficulty has been encountered in securing their names, the Secretary will be much obliged if the gentlemen occupying this position will send him their names and addresses. They will be kept informed from time to time of the work done by the Committee.

A NATIONAL DEPARTMENT OF HEALTH

At the last meeting of the New York Academy of Medicine Dr. C. A. L. Reed, of Cincinnati, stated that President Roosevelt would include in his forthcoming message to Congress a recommendation that all existing national health agencies be organized into a single "Department of Health." The head of such a Department would be a member of the Cabinet. For many years medical men throughout the United States, individually and through the medium of the American Medical Association, have vigorously urged the creation of such a Department in our National Government, both on economic and humanitarian grounds. Now that this recommendation of the medical profession of the country has received the approval of the President and is to be brought to the official attention of Congress, medical men especially should rally to its support and bring every proper influence to bear upon members of Congress to make the proposed measure a law.—*Colorado Medicine*.

FOR a long time now the Canadian banks have been importing Scotch bank clerks. It was only the other day that the Church of England decided to import Scotch missionaries. From which it appears that the Scotch are particularly apt at guarding the welfare of Canadians here and hereafter. Scotch thrift is to help us gain the world here; Scotch shrift is to help us to the world hereafter. Canada is, indeed, a lucky country to be so watched and tended by the Scotch. Their courage and industry pulled Canada through her hard times, and their enterprise will preserve Canada now that she is rich and easy. Neither our souls nor our siller are to be lost if Scotch missionaries and Scotch bank clerks can prevent it. Truly, the Scotch are a saving people.

The Physician's Library.

BOOK REVIEWS.

Fourth Annual Report of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis, February 1, 1906, to February 1, 1907.

This report is valuable for the fourteen well-written articles it contains. These articles, clinical and pathological in character, deal with the various forms of tubercular disease, as observed at the Phipps Institute. Useful to the practitioner, the statistics and observations made by the contributors would also tend to help along the work of preventing tuberculosis, if published in the daily papers and monthly magazines.

International Clinics. Eighteenth Series. Vol. II. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pædiatrics, Obstetrics, Gynæcology, Orthopædics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other topics of interest to students and practitioners.

While the editor announces that this work is intended for students and practitioners, it is par excellence a work for the student practitioner. The articles are by the foremost thinkers and are all practical and helpful.

In the section on Treatment, Louis Fisher's article on "Treatment of Scarlet Fever," including prophylaxis, goes into the treatment of many complications of this far-reaching disease.

The specific disease is again dealt with in an article by Hollopeau, who advocates its treatment by atoxyl, .50 to .75 gramme per gluteal injection, for six to eight doses. He claims preventive as well as curative properties for the drug, and that it may be combined with mercury and iodine.

"Treatment by Inoculation of Bacterial Vaccines" is the subject of an article by Turton, of Hull. He enters fully into the treatment, and cites a very encouraging number of cases benefited by the opsonic method.

In Medicine, an article by Cecil, on "Valvular Heart Disease," is especially interesting.

Theodore Diller, of Pittsburg, presents an article on "Pain as the Chief or Sole Expression of a Psychic State." He shows that hysterical pain may be recognized by two kinds of evidence, negative and positive; first, the pain fails to conform to that of any one organic disease—no physical disease to account for the pain. In addition, the influence of suggestion upon the pain, the manner in which the patient relates the story and conducts himself, and the manner in which the pain is described, are all indicative. The patient's story goes into great detail, with many dramatic accessories, showing that his whole life features chiefly about his pain.

In Surgery, there appear articles on "Reconstructive Surgery of the Face," by Roberts, of Philadelphia, and "The Symptoms and Diagnosis of Cancer of the Large Intestine," by Mummery, and "Treatment of Varicose Ulcer and Varicose Veins of the Leg," by Willmoth, are all full, comprehensive and practical, the latter article being especially valuable to the general practitioner.

Sampson, of Albany, contributes an article on "The Clinical Manifestations of Uterine Cancer," every word of which is worth pondering, when we consider how frightfully common this dread scourge is. With these statements of his all will agree:

"1st. In early stages it is a local process and curable.

"2nd. The growth is rapid, and soon extends beyond eradication by operative measures.

"3rd. Symptoms appear before the case is inoperable."

This one article, so splendidly illustrated, is worth the price of subscription. Every page is of interest and suitable to the student practitioner's requirements.

J. N. E. B.

Clinical Bacteriology and Haematology for Practitioners. By W. D'ESTE EMERY, M.D., B.Sc. (Lond.), Clinical Pathologist to King's College Hospital, and Pathologist to the Children's Hospital, Paddington Green; formerly Assistant Bacteriologist to the Royal Colleges of Physicians and Surgeons, and sometime Lecturer on Pathology and Bacteriology in the University of Birmingham. Third edition. London: H. K. Lewis, 136 Gower Street, W.C. 1908.

The success of the first and second editions has encouraged the author to bring out another so soon, adding to it somewhat, yet not altering the general scope. We find as some of the more important additions: a brief account of the methods of preparing bacterial vaccines; an account of making cultures of the blood by the use of an all-glass exploring syringe; and details of lumbar puncture, all being important and up-to-date matter. Some fine colored plates have been added.

The book should prove a good guide to the practitioner.

W. H. P.

Practice of Medicine for Nurses. By GEORGE HOWARD HOXIE, M.D., Professor of Internal Medicine, University of Kansas. With a chapter on the Technic of Nursing, by PEARL L. LAPTAD, Principal of the Training School for Nurses, University of Kansas, 12mo of 248 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Canadian Agents: J. A. Carveth & Co., Ltd., Toronto. Cloth, \$1.50 net.

After glancing over this book, perhaps the simplest way of reviewing it would be to say that a nurse cannot read it carefully and not receive benefit from so doing. It will be found helpful to those engaged in nursing the sick.

W. A. Y.

The Newer Remedies. including their synonyms, sources, tests, solubilities, incompatibles, medicinal properties, and doses, as far as known, together with such proprietaries as have similar titles. A reference manual for physicians, pharmacists, and students. By VIRGIL COBLENTZ, A.M., Phar. M., Ph.D., F.C.S., Professor of Chemistry in Columbia University, Department of Pharmacy. Fourth edition, revised and enlarged. Boston: The Apothecary Publishing Co., 145 High Street. 1908.

This is an exceedingly useful book of reference, the number of synthetic remedies having so increased during the last few years that it is most difficult to bear but a small proportion in mind, and still more so their composition and medicinal properties. Dr. Coblenz' work fills a gap and should prove most useful.

The First English Conquest of Canada. with some account of the earliest settlements in Nova Scotia and Newfoundland. By HENRY KIRKE, M.A., B.C.L.; F.R.G.S.; author of "Twenty-five Years in British Guiana," "From the Gun Room to the Throne." Second Edition, enlarged and illustrated. Sampson Low, Marston & Co., Ltd., 100 Southwark Street, London, S.E. 1908. Price, 3s. 6d. net.

This book is of special interest to Canadians on account of the Quebec tercentenary celebrations of past weeks, and the visit of H.R.H. the Prince of Wales to our shores. A perusal of it will be interesting and undoubtedly educational, and we would recommend its purchase.

W. A. Y.

The Stooping Lady. By MAURICE HEWLETT, Author of "The Forest Lovers," "Richard Yea and Nay," etc. New York: Dodd, Mead & Company. 1907.

The state of Whig society of a century ago in England is well represented. The arrogance of the aristocrats toward the lower

classes is shown in contrast with the society of the present day. The theme of the romance is the *stooping* of a lady of this set to the *debased* level of a tradesman. The conclusion is a tragedy in the death of the latter, who has been a successful radical politician and is killed in a riot, but all is made happy by the lady finding a man who claims her affection, though not as that first given.

J. J. O.

The Sexual Disabilities of Man and Their Treatment. By ARTHUR COOPER, Consulting Surgeon to the Westminster General Dispensary; formerly House Surgeon to the Male Lock Hospital, London. London: H. K. Lewis, 136 Gowers Street, W.C. 1908.

This little book, consisting of 177 pages of reading matter, is divided into two sections: (1) Sterility, and (2) Impotence. It treats of a much-neglected subject in an interesting manner, and when we consider that between 10 and 25 per cent. of barren marriages are the fault of the husband, that fact being often discovered after the gynæcologist has subjected the poor wife to a prolonged, painful and dangerous treatment for sterility, we begin to think it is time more was written and known about this somewhat delicate subject. The general practitioner will find the book a help when consulted on this class of case.

W. H. P.

Thought She Knew Him.—A short time ago a surgeon had three leg amputations in a week. The unusual number caused talk in the surgeon's household, and his little daughter Dorothy was greatly interested. A few days after the last operation the surgeon's wife and little Dorothy were rummaging in the attic. In a trunk was found a daguerreotype depicting a girl about eight years of age. The portrait, through a peculiarity of pose, showed only one leg of the subject, the other being doubled up under her.

"Whose picture is that, mamma?" asked Dorothy.

"Mine. It was taken when I was a child not much older than you are now."

"Did you know papa then?"

"No, dear. Why do you ask?"

"I thought maybe you did, 'cause you've only got one leg."—*The Delineator.*

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